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THE ISCHIAL-RAMIC DIAMETER

THE ORIGIN OF THE COMMON LEFT CERVICAL TEAR AND ITS PREVENTION *

JOHN P. GARDINER, M.D.

TOLEDO, OHIO

The knowledge of the ischial-ramic diameter has an important bearing on the proper conduct of labor. That portion of the pelvic cavity between the plane of the superior strait and a plane passed parallel through the ischial spines is a crude, heart-shaped cylinder in which the oblique diameters are greatest (Fig. 1). Near the end of the first stage of labor the presenting part is found in one of the oblique diameters, usually the right—a left occipito-anterior presentation. In this position the left parietal bone of the fetal head is in contact with the left ischial spine and the right parietal bone is in contact with the inner surface of the descending and ascending rami of the pubis and ischium (Fig. 2). In the usual presentation, the presenting part must be forced against the left ischial spine if there is any disproportion between the presenting part and this diameter.

ANATOMY OF THE ISCHIAL SPINES

Though the ischial spines are usually located in the anterior portion of the posterior half of the pelvic cavity, they are sometimes in the middle, making a possible variation in position of more than a centimeter. Furthermore, they are not always in the same vertical or horizontal plane. They vary in size from a line, flat with the contour of the pelvic cavity, to a projection with a convex curve the edge of which may extend out into the pelvic cavity nearly a centimeter in the well known anatomic oblique direction. Their lower edges usually curve anteriorly and end in a point; many times the inner edge and lower point are markedly sharp and jagged, though covered by the vaginal wall (Fig. 3). When making an obstetric examination of the pelvis, one is at times impressed by the extreme prominence of the ischial spines and it is difficult to realize that they are situated more toward the middle than the back of the obstetric pelvis; for the examining finger finds the tip of the coccyx, which lies its full length in the pelvic floor, relatively at the same distance from the pubes as are the ischial spines. This relation is changed at the end of the first and during the second stage of labor, when the posterior dilatable portion of the pelvic outlet is stretched to the maximum degree, while the fixed ischial spines retain their position near the middle of the pelvic cavity. I do not here touch on the historic discussions of several years ago on the relation of the ischial spines to synclitism.

MEASUREMENT OF ISCHIAL-RAMIC DIAMETERS

After much experimentation with personally supervised manufactured instruments, I have found that the fingers of the examining hand serve the purpose of measurement very well. It is not necessary to measure directly the ischial-ramic diameter, because the distance from the ischial spines to the pubic notch gives the necessary information. The fixed point is the subpubic ligament, the same point as is used for determining the oblique conjugate diameter of the inlet and the anterior-posterior diameter of the outlet. The ischial-ramic diameter, from detailed pelvic measurements, I have found to average 9.5 cm., and the distance from the ischial spines to the subpubic ligament to average 8.5 cm., making an average difference of 1 cm. in the two measurements. In an individual pelvis the difference can be readily estimated with the examining finger by determining the depth of the contour of the inner surface of the rami of the pubis and of the ischium opposite the ischial spine.

To determine the length of the ischial-ramic diameter, either hand may be used, but I will describe the use of the right. The fore and middle fingers are employed as when taking the internal pelvic measurements. The right ischial spine is located and its size, shape and distance are determined. The latter measurement is found by gently pressing the tip of the middle finger against the right ischial spine and at the same time noting the point of contact of the forefinger with the subpubic ligament. By rotating the palm of the hand, the left ischial spine is located, and the point is observed at which the ulnar border of the middle finger touches the subpubic ligament. The distance between the tip of the finger and the touch of the subpubic ligament gives the basis for the calculation of the ischial-ramic diameters. In each instance the contour of the inner surface of the rami opposite the ischial spines is palpated and the estimated depth, usually a centimeter, is added, giving the complete diameter.

PLANE OF CERVICAL DILATATION

The plane passed through the ischial spines parallel to the plane of the superior strait extends anteriorly to the rami of the pubes about 2 cm. below the subpubic ligament and posteriorly through the inferior part of the third sacral vertebra.[1] I have found, by the exami-

* From the Obstetric Department of Robinwood Hospital, and the Prenatal Clinic of the Dispensary of the Toledo District Nurse Association.

* Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Seventy-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., May, 1925.

1. Hodge, describing this plane of the pelvis, makes its position a little lower: "The third parallel plane should be drawn on a level with the spines of the ischia. It will be found extending posteriorly to the center of the fourth bone of the sacrum and anteriorly to the rami of the ischia, about an inch below the subpubic ligament" (Hodge, H.: Obstetrics, Philadelphia, 1864, p. 27).

nation of women in labor and by mensuration of the photographic cuts of sagittal sections of women who have died during the different stages of labor, that cervical dilatation takes place in the plane of the ischial spines. During cervical dilatation, the posterior lip of the cervix is a trifle below this plane and the anterior

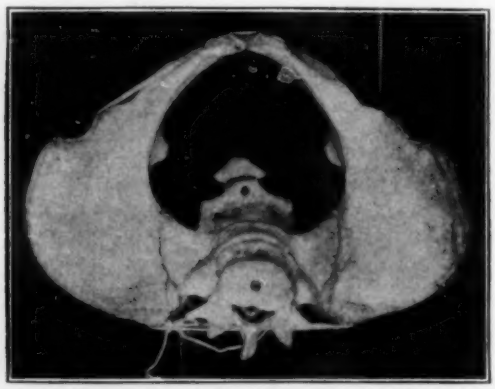

Fig. 1.—Heart-shaped cavity of the pelvis, which is cylindric from the superior strait to the plane of the ischial spines; projection of the ischial spines into the pelvic cavity.

lip a little above, owing to the curve of the outlet.[2] The plane of cervical dilatation varies very little in location.

THE MOST FREQUENT CERVICAL TEAR

The relationship between the ischial spines and the plane of cervical dilatation being pointed out, the danger to the cervix from laceration can be readily understood. There is a great difference between the birth mechanism of the cervix and the birth mechanism of the vaginal outlet, and they must not be confused. The cervix dilates equally in all directions, allowing for the maximum stretching; while the vaginal outlet is fixed at the symphysis anteriorly, and is elastic and mobile posteriorly. This latter part, when under great strain, may be lacerated, especially if at the outlet the birth is rapid or if there is a large head. Before complete cervical dilatation has taken place, any downward pressure or expulsive effort causing the presenting part to descend brings the cervix in contiguity with the left ischial spine, and if there is any disproportion in the ischial-ramic diameter, the cervix is caught between the spine and the bony head of the child. Pressure at the point of contact occurs and the damage to the cervix is proportionate to the amount of uterine tissue exposed and the degree of pressure exerted (any pressure necrosis may extend to the limits of the injury). In a left occipito-anterior presentation, the danger to the cervix is greater from the left than from the right ischial spine.

PREVENTION OF LACERATION

Having observed the left lateral tear to be by far the most frequent of the cervical lacerations, as has been mentioned by Hart and other writers, and having found by postpartum examination these tears to be in juxtaposition with the left ischial spine, I am convinced that the cervical laceration is not caused by overstretching per se or by the asymmetrical position of the uterus, but by pinching of the incompletely dilated cervix between the fetal skull and the ischial spine. In the later half of the first stage of labor the cervix is not yet sufficiently dilated to pass above the plane of the ischial spines, but is still in a thinned out condition, grasping the presenting part. Particularly is this the case in primiparas; for in multiparas the cervix has been more or less injured previously, and therefore the amount of cervical tissue exposed is not as great. It has been the custom to allow a woman in labor to exert every effort to augment the uterine contractions. She has been allowed to grasp the nurse's hands or perhaps has been given something on which to pull. This practice is extremely poor obstetrics, and *before* the cervix is dilated, is fraught with danger. Undoubtedly because of these harmful effects on the cervix the obstetric law has been established that there should be no interference in labor until the first stage is complete.

This warning may be further emphasized because any downward traction causes the undilated cervix to come in contact with the ischial spines. Posterior and anterior and many lateral and stellate tears are due to poor instrumentation (Fig. 4). The danger may be greater from the use of forceps than from the fetal head, because the distance between the blades of the forceps is fixed and any shift in the position of their pelvic curve may bring the edge of their cephalic curve in contact with the ischial spines (the Kielland pattern is an improvement).

ANALYSIS OF CASES

If expulsive efforts are the cause of pressing the undilated cervix onto the ischial spines, when there is a disproportion between the fetal head and the ischial-ramic diameter, then controlling the expulsive efforts before cervical dilatation is completed ought to show a decrease in the injury to the uterine cervix. With these facts in mind, examinations were made in 275 cases ante partum and again post partum. The virgin os is usually round and occupies the center of the cervix.

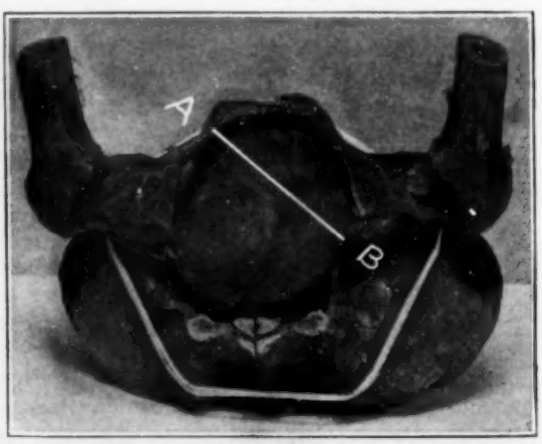

Fig. 2.—The pelvis is sectioned through the ischial spines parallel with the plane of the superior strait, showing the normal relation here of the fetal head; *A-B*, ischial-ramic diameter; the position of the parietal eminence and of the left ischial spine should be noted.

Four times post partum was the picture of the virgin os seen. From the appearance of the cervix in these four cases it was impossible to tell that labor had taken place. The remaining 271 cases were chiefly of two classes, those in which the os was round and about 5 mm. in diameter, and those in which a crease extended to the left from 3 to 5 mm. and a notch to the right from 2 to 3 mm. from the cervical os. The latter was the most frequent lesion in this series, and is probably

2. Above the plane of the ischial spines, the pelvic axis is straight, and below it, curved. J. W. Williams (Obstetrics, New York, D. Appleton & Co., 1917, p. 10) with truth points out that this "was well understood by Hodge and strongly insisted on by Sellheim" (Sellheim, H.: Die Beziehungen des Geburtskanales und des Geburtsobjektes zur Geburtsmechanik, Leipzig, 1906).

the standard laceration in an unassisted labor to which the cervix is liable. Though variations were encountered in estimating the ischial-ramic diameter, the most frequent diameter was 9.5 cm., with the anterior curve of the ischial spine extending 3 mm. into the pelvic cavity and with the anterior edge of the

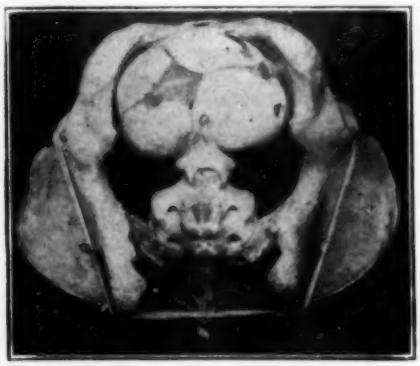

Fig. 3.—The prominence of the ischial spines, their anterior curve ending in a sharp point. The small fetal skull is not exactly in the normal oblique position, being a little too transverse.

spine 5 mm. or more ending in a sharp point. It is my conviction that this crease is due to a disproportion between the fetal head and the left ischial-ramic diameter, and the notch to a disproportion between the fetal head and the right ischial-sacral [3] diameter. To give this series some basis of comparison, I have included the examinations of twenty-five multiparas who were delivered elsewhere or were delivered by me before I realized the importance of the ischial-ramic diameter. In this group the scars are longer than those of the groups just described and are due to some definite disproportion, such as a large head which had been allowed by expulsive efforts to bruise the cervix before sufficient dilatation had occurred or, which is more usual, due to instrumentation too early applied because of supposed delay in labor. Some of the lacerations extend as far as the cervicovaginal junction, and they vary considerably in depth and number. It is obvious, then, that any interference during the first stage of labor may be injurious to the uterine cervix and predispose it years later to cancer. The first stage of labor should be so conducted that the cervix is allowed to dilate fully before the expulsive efforts are encouraged.

CONCLUSIONS

1. The ischial-ramic diameter is an important pelvic diameter.
2. The plane of cervical dilatation is in the same plane as that of the ischial spines.
3. The most frequent left lateral uterine tear is due to a disproportion between the fetal head and the left ischial-ramic diameter.
4. To prevent this tearing it is necessary to wait for full cervical dilatation; any interference during the first stage of labor is fraught with danger, unnecessarily predisposing it to the development of cancer.

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ABSTRACT OF DISCUSSION

DR. J. B. DE LEE, Chicago: There are certain points about this paper which I feel require a little further elucidation. I doubt very much whether the ischial spines directly cause laceration of the cervix through the mechanism of pressure necrosis of the tissues between the head and the spines. Normally, the distance between the ischial spines is from 10.5 to 11.5 cm. and the biparietal diameter of the head which passes through that region at the time pressure on the cervix would take place, is from 9.5 to 10 cm. Furthermore, we know that by the time the head passes that neighborhood, the dilatation is complete, if not fully, then nearly complete. The mechanism of laceration of the cervix is not fully understood. We know, in the first place, that the two sides of the cervix are the most vulnerable. That is due to its congenital formation. My own microscopic studies of the cervix showed that on each side of the cervix there was a thinning of the fibrous tissue of the cervix and a still greater thinning of the muscular tissue. Incidentally, there is very little of the latter. My studies of the relation of the cervix to the central axis of the pelvis in the latter part of pregnancy and early part of labor showed that the cervix is seldom in the center. Often it is off to the side, occasionally a little anterior or posterior to a line drawn through the transverse diameter of the pelvis in any one of its planes. I have noticed, and my associate Dr. Anna Lapham called attention to this, that in occipitoposterior positions the cervix is likely to be posterior to the transverse diameter of the pelvis; in occiput anterior it is apt to be anterior. I can often tell when a woman comes to me, six or eight months after delivery, whether or not the child was lying in an anterior or a posterior position. The lacerations in the right position are on the right side of the pelvis and, correspondingly, on the left. Laceration of the cervix, vagina or perineum, cervical tears, vaginal tears and tears of the levator ani muscle and the pillar of the levator ani usually occur on that side of the pelvis in which the occiput lay during labor. Therefore, I should be inclined to disagree with the author that lacerations are always due to the compression of the cervix between the spines and the head. The fascial planes have also a great deal to do with the location of the injury. The thickening of the iliac fascia, the deep pelvic fascia, occurs anterior to the ischial spines about one-half to three-fourths inch. The

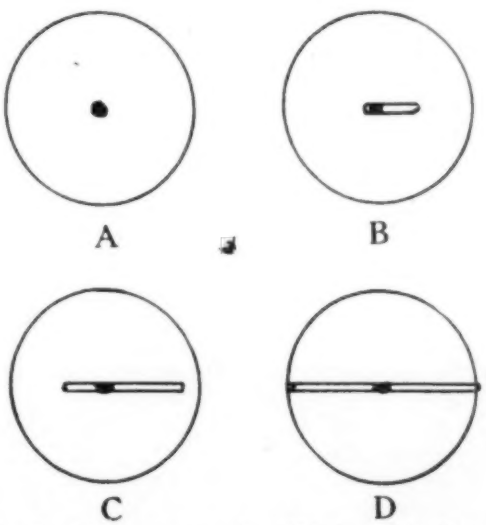

Fig. 4.—*A*, virgin type of cervix, which is occasionally seen post partum; *B*, usual type of cervix seen after an uncomplicated delivery; tear to the left and notch to the right; *C*, laceration resulting from a large head; too early expulsive efforts had been encouraged; *D*, laceration due to too early instrumentation.

planes of fascia that extend to the cervix forming the so-called cardinal ligaments are not located in the region of the ischial spines. The conditions, therefore, which expose the cervix to the full power of the uterine contractions and the laceration lie in that region, anterior to the spines.

3. The ischial-sacral diameter is the distance from the right ischial spine to the right lower edge of the sacrum.

Efficiency of the Heart.—The rapidity of the circulation in healthy men and animals is not proportional to their body weights, but in general to their surfaces, that is, their skin areas.—Yandell Henderson.

THE SELLA TURCICA

THE SIGNIFICANCE OF CHANGES IN ITS ROENTGENOGRAPHIC APPEARANCE *

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The diagnostic significance of changes in the roentgenographic appearance of the sella turcica was first recognized by Oppenheim, who observed certain

Fig. 1.—Normal sella: oval type.

changes in a case of acromegaly. Since that time the roentgen-ray image of this structure has become of considerable interest to the internist, neurologist, surgeon and radiologist, and the relative frequency with which radiologists are called on to examine this structure is just evidence of the importance attached to changes in its contour.

Notwithstanding the numerous observations recorded in the literature concerning the sella, there still appears some confusion regarding the significance of certain changes in its roentgenographic appearance. It is futile, however, to endeavor to visualize changes in a roentgenogram without familiarity with the normal anatomy, its variations and the appearance of pathologic conditions in the gross.

With this end in view, 110 specimens removed at necropsy were carefully examined as to variations in size and contour and as to changes in the clinoid processes or related structures. Roentgenograms of many of these were available, and, coupled with the observations made from a large number of additional roentgenograms, it was possible to correlate the normal and pathologic anatomic changes with those observed in roentgenograms.

A true lateral position is a prerequisite for the correct radiographic demonstration of this structure, and considerable care should be used in leveling the head and centering the roentgen-ray tube. The importance of these details cannot be underestimated, for slight malpositions of the head or the tube will result in pseudodeformities, which are most confusing.

* Read before the meeting on radiology in the Section on Miscellaneous Topics at the Seventy-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., May, 1925.

Generally speaking, the normal sella may be classified into three types: the round, oval and flat. This classification suggested by Gordon and Bell seems more practical than the more elaborate groupings suggested by other observers. Applying this classification to a series of 500 normal roentgenograms, consisting mostly of adult heads, the oval type (Fig. 1) was found in 58 per cent., the round (Fig. 2) in 24 per cent., and the flat (Fig. 3) in 17 per cent. of the cases. A similar classification of the contours obtained from wax impressions of the anatomic specimens revealed only slight differences in these percentages (oval, 66 per cent.; round, 21 per cent., and flat, 13 per cent.). It would appear from these figures that the oval type of sella is the usual finding in the adult. Such a condition does not hold true for the child, in which case, owing to the incomplete development of the sphenoid bone, the circular type is the rule.

Variations in the size of the normal sella are numerous, and consequently it is difficult to detect early changes. The average sella will measure 1.06 cm. and 0.81 cm. in the anteroposterior and vertical directions, respectively. This average, reconstructed from 500 normal roentgenograms of adults, coincides very closely with an average reconstructed from measurements of anatomic specimens. As any enlargement in size is generally at the expense of the adjacent structures, changes in the latter are probably more important when endeavoring to decide whether a specimen is actually enlarged or not.

Variations in the size and shape of the clinoid processes are numerous. The anterior clinoid processes vary in thickness and length and may be seen normally as short, blunt structures, with their extremities anterior to the anterior wall of the sella, or as elongated, narrow

Fig. 2.—Normal sella: round type.

structures, extending posteriorly toward the posterior clinoid processes, with which they occasionally unite. It is not uncommon for an anterior clinoid process to be united with a prominent middle clinoid process, and thus form a foramen for the transmission of the internal carotid artery.

The posterior clinoid processes project anteriorly from the superior lateral portion of the dorsum sellae, which may vary from a broad, bony structure to a thin, atrophic structure. The latter is frequently mistaken for an eroded process, and if motion was present when the exposure was made, such a structure may appear eroded completely. Occasionally, when a thick dorsum

Fig. 3.—Normal sella: flat type.

sellae exists, the posterior clinoid processes are most inconspicuous and are represented only by the rounded upper border of the heavy bony base. This type of process is particularly common in children, as the sphenoid bone has not fully developed.

Union between the anterior and posterior clinoid processes, with occasional inclusion of the middle clinoid, occurs in about 5 per cent. of necropsy specimens. This anatomic variation (Fig. 4) produces what is commonly referred to as a bridged sella. Roentgenograms of such a variation are quite misleading, as the shadow of the bony union, which is in reality just lateral to the pituitary fossa, is cast over the outlet of the sella and seems to enclose it and diminish its size. Such a deformity, as observed in roentgenograms (Fig. 5), has been cited from time to time as a cause for diabetes insipidus, epilepsy and migraine. When the anatomic relation of the anterior clinoid processes to the pituitary fossa is considered, especially the fact that these processes always pass lateral to this fossa and never over it, it is quite evident that the size of the pituitary fossa is not encroached on, and the theory of a union between the anterior and posterior clinoid processes producing pressure on the hypophysis, infundibulum or associated blood vessels seems quite improbable.

Aside from existing as an anatomic possibility, the appearance of a bridged sella may be produced in the roentgenogram by the superimposition of the shadows of the anterior and posterior clinoid processes. This may occur when the sagittal plane of the head is not placed parallel with the film or when the tube is incorrectly centered. An incorrect lateral position distorts not only the images of the clinoid processes but the contour of the sella as well, and under such conditions the pituitary fossa may appear unusually small or shallow.

The intimate relation of the sella turcica to the pituitary gland is no doubt responsible for the erroneous idea that all changes in its contour are the result of pituitary disease. While it is true that tumors of the pituitary produce well defined changes in the contour of the sella, there are so many other conditions capable of causing deformities in its contour that a failure to bear them in mind will often result in an erroneous diagnosis.

From the roentgenologic standpoint, the pathologic conditions producing deformities of the sella may be thus classified: 1. Intrasellar tumors involving the pituitary: (*a*) primary tumors, both benign and malignant; (*b*) metastatic tumors; (*c*) miscellaneous tumors, as gumma and tuberculoma. 2. Intracranial disease producing a chronic increase of intracranial pressure: (*a*) extrasellar tumors consisting of brain tumors, hypophysial duct tumors, meningiomas, osteomas and miscellaneous tumors, as abscess, aneurysm and cyst; (*b*) hydrocephalus, congenital and acquired; (*c*) craniostenosis with oxycephaly. 3. Disease of the sphenoid bone: (*a*) primary conditions, both benign and malignant; (*b*) secondary invasion by malignant tumors of the nasopharynx, metastasis, multiple myeloma and fracture.

Intrasellar tumors, as a result of their growth, enlarge the sella in a uniform circular manner, at the expense of the floor and dorsum sellae. The former is slowly eroded until a pouching into the sphenoidal sinus occurs, with a total destruction of the intervening bone. Roentgenograms at this stage show the outline of the floor to be represented by a double line. The higher line indicates the lateral border of the fossa, while the lower one is produced by the lower border of the tumor as it stands in contact with the air in the sphenoidal sinus. As the dorsum sellae is eroded, it first becomes concave on the anterior surface (Fig. 6), later straight (Fig. 7) and narrow, and finally is pushed backward by the increasing size of the tumor. In advanced cases, the

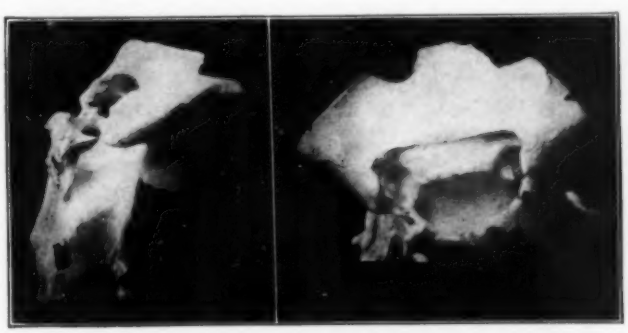

Fig. 4.—Necropsy specimen showing bony union between the left anterior, middle and posterior clinoid processes. The capacity of the pituitary fossa is not diminished by the presence of this anatomic variation.

dorsum sellae may entirely disappear, and under such circumstances it is difficult to differentiate the changes produced by a large pituitary tumor from those provoked by pressure from an extrasellar lesion. The anterior clinoid processes, because of their location slightly lateral to and above the origin of the tumor, are not so easily affected by its growth, and then not until it has reached a fair size. When involved, they are eroded from below and behind, with the production of short, blunt processes. The differentiation of benign

and malignant pituitary tumors by means of the roentgenogram is impossible. The size and extent of deformity may arouse suspicion that malignancy exists, but such changes are not characteristic and are wholly unreliable.

By virtue of its location, a pituitary tumor is unable to produce an increase of intracranial pressure until it has reached considerable size; consequently, the presence of a uniform circular enlargement of the sella with

Fig. 5.—Bridged sella.

thinning of the dorsum sellae and erosion and distention of the floor, without evidence of intracranial pressure changes in the rest of the skull, except in very advanced cases, is quite indicative of intrasellar tumor (Fig. 6).

Any cerebral neoplasm that produces an increase of intracranial pressure by virtue of its size or ability to obstruct the ventricles will produce corresponding changes in the outline of the sella. The changes in this structure are the result of transmitted pressure, and appear simultaneously with the other pressure changes in the skull.

In contradistinction to the characteristic deformity of intrasellar tumors, the pressure associated with extrasellar tumors produces a widened and flattened sella (Fig. 8). As the pressure comes from above, the posterior clinoids are eroded from above, rather than anteriorly, and they become shortened and pointed rather than narrowed and thinned. The anterior clinoid processes are thinned and pointed rather than shortened and blunted. The posterior clinoids, owing to their erect position and central location, are more easily eroded than the anterior, and in cases of marked intracranial pressure may exist only as remnants of the original structures. The anterior wall of the sella and tuberculum sellae, being eroded from above, cause the outlet of the fossa to become widened and the depth diminished rather than increased.

The extent of destruction depends on the degree and duration of the pressure. When a large sphenoidal sinus exists, continued pressure produces complete erosion of the thin bone forming the floor, and only dura and sinus mucous membrane remain to separate the fossa from the sphenoidal air space. The earliest roentgenographic evidence is a haziness or indistinctness of the floor due to erosion and thinning of the bone. As the pressure continues and the erosion is increased, the sella loses its rounded contour, and the pituitary gland may be pushed partially into the sphenoidal sinus (Fig. 9). In children, in whom the sphenoidal sinus is not fully developed, and in whom the floor is formed by the basisphenoid bone, the erosion from pressure produces a marked cupping of this bone.

Hydrocephalus induced by causes other than cerebral neoplasm, because of its accompanying increased intracranial pressure, will produce changes in the sella exactly simulating those induced by extrasellar tumors. Deformities of the sella produced by increased intracranial pressure, resulting from such lesions as brain abscess, cerebral aneurysm, cysts or craniostenosis, cannot be differentiated in the roentgenogram from a deformity produced by other extrasellar lesions.

Disease of the sphenoid bone, either primary or secondary in origin, will produce a change in the roentgenographic appearance of the sella. Changes secondary to a malignant tumor, extending from the nasopharynx and invading the sphenoid, are most common (Fig. 10). In such conditions, the sphenoidal sinus is increased in density, and there is a haziness of the floor of the sella. Generally, unless the tumor has progressed to intracranial involvement, the contour of the sella is maintained, and usually the normal outline of the dorsum sellae and clinoid processes may be distinguished. Intracranial pressure changes in the skull are absent. Other conditions, such as tuberculosis, gumma, multiple myeloma, metastasis, primary malignancy, chordoma and osteoma of the sphenoid, are comparatively rare. With the exception of the shadows cast by osseous tumors, it is impossible to distinguish, by the sella changes alone, the other tumors of either primary or secondary origin.

Fig. 6.—Characteristic rounded deformity of the sella, produced by an intrasellar tumor: The dorsum sellae and posterior clinoids are eroded and thinned.

Occasionally a basal fracture of the skull is so directed through the pituitary fossa that a defect in contour may be seen in the roentgenogram.

SUMMARY AND CONCLUSIONS

1. Observations based on anatomic specimens and roentgenograms show the normal sella to vary in contour and size.

2. Variations in contour may be classed into three types: the round, oval and flat, of which the oval type predominates in the adult.

3. The average sella will measure 1.06 cm. and 0.81 cm. in the anteroposterior and vertical directions, respectively.

4. Variations in the shape of the clinoid processes are numerous, and union between the anterior, middle and posterior clinoids, producing a bridged sella, occurs in

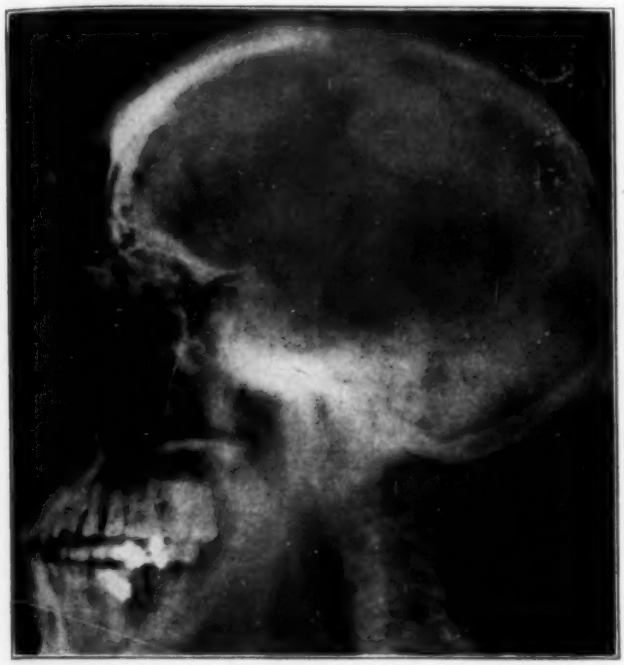

Fig. 7.—Deformity of the sella produced by a sarcoma of the pituitary gland: The dorsum sellae and posterior clinoids are eroded and displaced to a vertical position.

about 5 per cent. of cases. Such an anatomic variation seems to be of no clinical significance.

5. Pseudo-defects and apparent anomalies of structure are easily produced in a roentgenogram by faulty localizing technic.

6. Pathologic conditions producing changes in the sella are numerous, and the differentiation of these changes as to cause is often difficult.

7. Owing to the characteristic deformity of the sella usually produced by each, the differentiation between an intrasellar and an extrasellar lesion is generally possible.

ABSTRACT OF DISCUSSION

DR. L. T. LEWALD, New York: We are called on by neurologists to pass on cases of this sort, particularly pituitary epilepsy, pituitary headache, and the early diagnosis of brain tumor and acromegaly and similar conditions that may be, and are sometimes attributable to changes in the pituitary gland. As to the bridged sella, I quite agree that the terminology is absolutely incorrect. I would offer as a substitute "closed sella," for the processes are not absolutely fused; they closely approximate each other. I am of the opinion that there may be an element of pressure on the pituitary gland; that is to say, as the gland is congested and circulatory changes are taking place, so-called pituitary headache will result if there is not allowance for expansion laterally as well as above. This fusion or tendency to closure laterally is of significance. In some of these cases, the result of treatment by pituitary extract has been improvement.

DR. ISAAC GERBER, Providence, R. I.: I want to say a word about this fallacy of laying too much stress on the significance of fusion of the clinoid processes. Schiller of Vienna, who perhaps knows more about the matter of the sella than any other man living, absolutely contradicted Johnson's views as far back as 1913. Since then he has had hundreds of cases, which he has been able to check, that absolutely contradict that point of view. The trouble about it is not that it is an academic proposition, but that in this matter of attributing important endocrine disturbances to slight differences in the appearance of the sella, there has been an enormous mire of pathology as well as a bizarre organic therapy developed. The chief offenders are very prominent endocrinologists, officers of very prominent national societies. I have seen over and over again cases in which I and other roentgenologists were able to see absolutely normal sellae with simple differences that were within normal limits, and because there were endocrine disturbances demonstrable in the patient, these eminent endocrinologists were able to point particularly to what they termed pathognomonic changes in the sella which they considered were part of the pathologic symptoms, or even the causation of the endocrine disturbance. I thought that this whole matter was pretty well settled, that these normal variations took place in sellae and had nothing to do with endocrine disturbances, but I see it is worth while bringing out that phase again and not allow ourselves to fall into the error of "post hoc, ergo propter hoc," that, merely because a patient has an endocrine disturbance, a normal variation in the sella necessarily has anything to do with it.

DR. HENRY K. PANCOAST, Philadelphia: I should like to second the remarks just made by Dr. Gerber and to sound a warning with him against reading into practically normal roentgenograms evidence of endocrine disturbances. I was very glad to hear Dr. Camp's remarks about the measurements of the normal sella. For a number of years I have been doing the same thing, and we now have collected several hundred normal cases. In every head case that we examine, we measure the sella by a special technic, and if the head is normal we register the sella measurements. A great deal will depend on the technic that is used. We

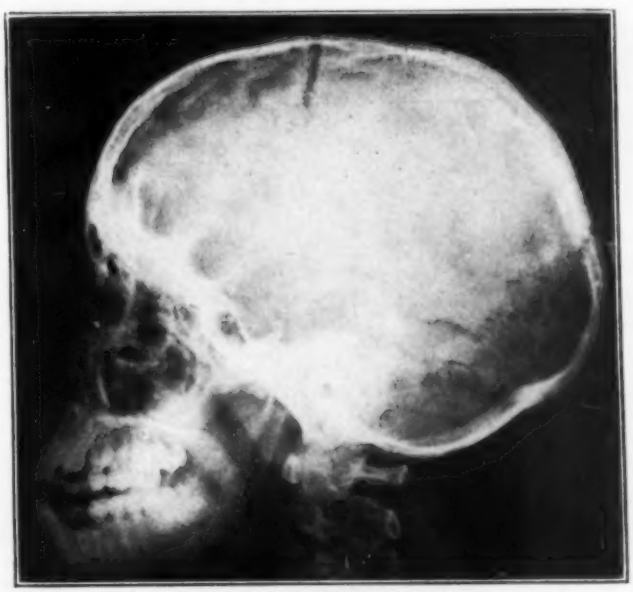

Fig. 8.—Characteristic flattened deformity of the sella produced by an extrasellar tumor (glioma of the cerebellum). The pointing of the anterior clinoid processes is well defined.

always expose at a distance of 36 inches. I believe that is a sufficient distance. The problem is quite different from making a six or seven foot plate of the chest. The central rays, of course, must be directed through the sella so as to have the clinoid processes superimposed. Our average normal measurements are practically the same as Dr. Camp's normal—something over 10 mm. The top normal size is 12 mm. with us, and anything over that we regard as beginning to

be abnormal. I am also very glad to hear what has been said about the bridged sella. I have never believed that this appearance implied encroachment on the sella turcica. It is entirely a lateral affair, and the pituitary body has plenty of room, notwithstanding the fact that we see in our lateral views an apparent bridge. It is unfortunate that we are unable to obtain any other satisfactory view than the lateral view of the sella turcica. Possibly some time we may be able to obtain one that will show the lateral dimension as well as the anteroposterior dimension.

DR. M. D. GORDON, Brooklyn: Dr. Bell and I did some work on the sella turcica in normal subjects, and we classified them according to the classification that Dr. Camp used. We found, in studying the endocrine disorders of children, absolutely no variations from the normal. As far as the shape is concerned, the classification of A, B and C held good in the abnormal children as well as in the normal, with this variation, however, that while in the normal children we found that we had an increase in the number of the round cell, or the Group A, as we termed it, in the abnormals, we had an oval predominance. The differentiation between Group A and Group B, between the round and the oval, is very difficult at times to make. Dr. Camp found that the oval predominated in adults, and we found that the round predominated in children. That really does not make very much difference, because in our second series, the oval and the round occurred in about the same proportion. The most important thing to remember is that the round and the oval do predominate in both adults and children. The flat type or the saucer-shaped type was present in both our series and Dr. Camp's series—normal and abnormal—in only between 10 and 15 per cent. The next important thing was the question of the excavation which was reported by Timbie as being pathognomonic of mongolian idiocy. We could not differentiate between mongolians, myxedematous idiots, hydrocephalics, microcephalics, morons, or any of the types of abnormal children. In fact, we could not differentiate between abnormal and normal children. In both series, 79 per cent. showed an excavation. We feel that there is absolutely nothing in the sella turcica, as far as a roentgen-ray picture is concerned, that is of any significance at all from an etiologic or from a diagnostic point of view. As far as endocrinology is concerned, it has absolutely no bearing on organotherapy or on the function of the pituitary, because the excavation is anterior to the sella turcica and has nothing to do with the sella turcica itself. The number of cases in which bridging showed was very small, and did not count at all in the symptomatology. As far as pituitary disease was concerned, we found no change at all in the sella turcica which would give any clue at all as to the symptomatology. We found no larger shapes or smaller shapes in pituitary or hypothyroid or goiter cases. In other words, our goiter cases did not give us a larger sella than our hypothyroid cases.

Fig. 9.—Erosion of the sella and displacement of the pituitary gland into the sphenoidal sinus, resulting from increased intracranial pressure from a neurofibroma of the right acoustic nerve.

Fig. 10.—Clouding of the sphenoidal sinus and partial destruction of the sphenoid bone produced by a malignant tumor extending from the nasopharynx. The dorsum sellae and posterior portion of the floor of the sella are still faintly visible.

The size did not mean anything at all. We could not tell by the size what our symptomatology would be.

DR. JOHN D. CAMP, Boston: Dr. LeWald has brought up the question of a bridged sella. This is always very interesting to me because it is the reason that I happened to start this work. A very prominent pathologist remarked that he did not think that the presence of a bridged sella had anything to do with these conditions, and because a certain neurologist told him he thought they had, he asked me whether I would not undertake this problem and find out. I have seen some cases of dyspituitarism in which bridging of the sella showed in the roentgenogram; but before undertaking this work, we ran through a large series of controls. It was surprising to see the cases in which bridging of the sella was shown. Our average was about 5 per cent. In my series on necropsy specimens, I was able to find seven cases in which bridging of the sella showed on one side or the other. In one specimen bridging showed on both sides, and in none of these seven cases were they symptoms which could be referred to endocrine disorders of one kind or another. So that after considering all the cases which showed bridging of the sella and also considering those which had some pituitary disturbance, we came to the conclusion that bridging occurred so frequently in normal persons that its occasional presence in patients showing endocrine disorders was nothing more than a coincidence.

Insanity and Delinquency.—Just as mental defect explains a small percentage of delinquency, so does insanity; but it accounts for only a small percentage—not more than 0.5 per cent of all cases. It must be kept in mind, and also the fact that dementia praecox is often closely allied to mental defect, and sometimes difficult to distinguish. At the present time there is a further difficulty, owing to the not infrequent sequelae of encephalitis lethargica that come along.—Potts, W. A.: *J. Ment. Sc.* **71**:679 (Oct.) 1925.

NEURO-ARTHROPATHIES OF PERIPHERAL NERVE INJURY ORIGIN

REPORT OF TWO CASES *

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AND
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In a previous communication we [1] reported an interesting example of a neuro-arthropathy of peripheral nerve origin. Since its publication, a fortuitous circumstance has permitted us to place on record another instance of this little understood joint anomaly. Before proceeding with a detailed description of the two cases observed and their subsequent course, it will be necessary, for a clearer understanding of the subject of neuro-arthropathies in general, to quote in part from our former publication.

The association of bony changes—limited principally to joint structures—with grave disease of the central nervous system has been observed for a great number of years. The recognition of such structural osseous anomalies occurring in the course of tabes and syringomyelia was given impetus by Charcot, who was the first to describe them accurately. Thus the term Charcot joint found universal acceptance in the literature and was readily interpreted as a destructive arthritic process dependent on and secondary to involvement in a disease process of certain fiber tracts in spinal cord parenchyma. As tabes and syringomyelia were apparently the only affections that developed such arthropathies fairly consistently, it was readily assumed that they were peculiar to these diseases only and that such profound joint changes could develop on no other basis.

The advent of the roentgen ray served further to emphasize the existence of these arthropathies, since the diagnosis could be made quite early before they are demonstrable clinically and before grave destructive changes take place. The assumption that they existed only in association with such diseases of the central neural axis as tabes and syringomyelia seemed justifiable, since these arthropathies were never observed in any other condition. The routine use of the roentgen ray in bone and joint conditions, however, revealed the fact that affections other than those heretofore mentioned were capable of setting up changes in joints comparable to the classic arthropathy of Charcot, and it is of these in particular that we wish to speak.

That this possible widespread misconception of neuro-arthropathies may have great potentialities for harm makes it imperative that its existence be recognized outside the domain of the tabetic or syringomyelitic patient. The detection of a neuro-arthropathy presents no special difficulties and need not be dwelt on. Confusion will arise, however, when such an instance presents itself in the absence of the accepted orthodox diseases that create neuro-arthropathies. This state of affairs occurred in the patient studied by us, and the misinterpretation of the negative neurologic and serologic findings led his previous medical advisers to perform an unnecessary joint operation for suspected malignancy.

The foregoing quotations should serve in the main to foster the conception that we have ventured to formulate, that a neuro-arthropathy may be wholly the product of peripheral nerve disease or injury. The theoretical considerations of the mechanism that may bring about such destructive changes in the joint were dwelt on in our earlier communication and need not be repeated here.

The incidence of neuro-arthropathies of peripheral nerve injury origin is interesting and startlingly high. During the last four years, twenty-five patients with neurotrophic joints were observed. Of this number, twenty-two were of the classic Charcot form in tabes. One of them was caused by syringomyelia, and two of them were of peripheral nerve injury origin. None were attributable to spinal injuries or anomalies, a cause stressed by continental writers. Of considerable significance is the fact that in reviewing, quite recently, a large series of spinal anomalies and fractures observed over several years, we were unable to find a single case of associated neuro-arthropathy.

We will omit from present consideration arthropathy of central origin, i. e., tabes and syringomyelia, and, since our interests have been centered largely on the form that is of peripheral origin, we will present a clinical concept of the type under discussion. We are obviously not concerned with the arthropathies secondary to nerve injuries as a result of warfare, since these have been ably described by continental writers and mentioned in our earlier publication. What we have in mind is the type that is the product of the stresses and traumas of civil life.

INCIDENCE

The condition, as we have observed it, occurs in laborers subjected to prolonged or repeated severe muscle strain or severe traumas to the joint, either by direct or by indirect violence. Undoubtedly this must in some inexplainable way compromise the peripheral neural mechanism, which in turn initiates the destructive changes in the joint. Slight disability follows an injury or strain of unusual severity. This gradually diminishes to such an extent that, in one case, the original injury was forgotten, whereas, in another instance in which the injury was more severe, the disability was more profound and lasting and merged into that caused by the arthropathy.

The condition develops very insidiously with moderate disability. Little, if any, pain is present. A progressive swelling of the joint ensues, which may attain considerable proportions. The disability that ultimately supervenes is apparently the result of the mechanical factors secondary to the marked periarticular swelling and disorganization of the joint. Pain may be entirely absent, just as in the neuro-arthropathies of central origin.

PHYSICAL EXAMINATION

The physical examination reveals a markedly swollen joint with distended synovial sacs. The skin is tense and glossy, and the veins may be prominent over the joint. The appearance physically simulates to no slight degree a malignant tumor. However, the striking absence of pain and tenderness during manipulation of the joint serves to call attention to the neurogenic nature of the condition. The neurologic examination and the blood and spinal fluid findings yield negative data, and finally the roentgen-ray appearance furnishes convincing evidence of a neuro-arthropathy.

DIAGNOSIS

The diagnosis, therefore, may be made by a combination of positive roentgen-ray and physical findings, and negative neurologic and serologic data, with a history of delayed onset after an injury. We have ventured to regard this form of neuro-arthropathy as a new clinical entity.

* Read before the Section on Orthopedic Surgery at the Seventy-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., May, 1925.

1. Philips, H. B., and Rosenheck, Charles: Neuro-Arthropathies: A Consideration of the Etiology and the General Characteristics, J. A. M. A. 82: 27 (Jan. 5) 1924.

SUBSEQUENT COURSE

The subsequent course cannot be stated definitely for the obvious reason that the original case we described has been under observation only two years, and our recent case one year. The patients at present are both doing hard work, and apart from the disability

Fig. 1 (Case 1).—Neuro-arthropathy of peripheral nerve injury origin, showing the condition four months after the injury.

incidental to the mechanical disturbance previously mentioned, apparently suffer no discomfort. The history of our second case may now be cited.

History.—J. B., a man, aged 42, applied at the clinic of the Hospital for Joint Diseases in April, 1924. The family and previous histories were entirely negative and irrelevant. He had worked for several years in a lumber yard, carrying planks on his shoulder. His work was hard and strenuous. In January, 1924, several pieces of heavy lumber fell 12 feet, striking him on the left shoulder. He continued to work for two days, when the swelling and loss of motion made work impossible. This condition continued for three months, with pronounced swelling of the shoulder; then gradual retrogression of the pain took place, but the patient was not able to return to work for ten months after the injury, as a result of the swelling and limitation of motion.

Examination.—The patient was robust and well nourished, with fine muscular development. The examination was entirely negative, except for the left shoulder girdle, which was markedly swollen, the skin over it being tense and glossy. There were no enlarged cutaneous veins present. The temperature of the shoulder region was not elevated. Pain was present to a very slight degree when the shoulder was subjected to the strain of extreme positions. Crepitus was present. The shoulder joint, as well as the bursae of the shoulder, was markedly distended. Extreme abduction was impossible, actively, but there were no limitations to any motion or position passively.

The roentgen-ray examination (Fig. 1) showed a typical neurotrophic arthropathy, with disorganization of the internal third of the head of the humerus, with considerable bony joint detritus. There was a dense productive osteoperiostitis of the outer end of the clavicle and acromion process of the scapula. There was no bone atrophy in any portion of the shoulder girdle. The joint capsule was distended, and marked periarticular soft tissue swelling was present. The Wassermann reaction on the blood and spinal fluid was negative. The aspirated fluid from the joint was negative for any information of value and was inoculated into a guinea-pig with no effect.

A neurologic examination was thoroughly negative in every way. Further roentgen-ray examination of the spinal column showed no abnormalities.

Subsequent Course.—Treatment of the patient was palliative with physiotherapy. Gradual retrogression of the swelling and disability took place, so that the patient returned to work about ten months after the injury.

An examination in April, 1925, one year after the first observation, showed restoration of all function except complete abduction (90 per cent. was the limit without assistance). Most of the swelling had disappeared. The patient had not experienced any pain for more than six months and had resumed work about six months previously. Neurologic examinations continued to be negative in every respect. A roentgen-ray examination showed very little, if any, change in the shoulder joint, except for the disappearance of the marked periarticular swelling. Crepitus was still present. Pain was absent, and there was no disability except limitation of extreme abduction, apparently mechanical. The muscles of the upper arm and shoulder were of undiminished development with undiminished power and vigor.

It may also be of interest at this point to outline briefly the history of our original published case.

History.—H. O., a man, aged 30, whose chief complaint was incapacity from a markedly swollen condition of the left shoulder girdle, for the past seven years had been an ice and coal dealer, frequently carrying from 50 to 100 pound loads on his shoulders. Occasionally he was compelled to drag 300 pounds of ice unassisted. Six mouths before we saw him, the patient wrenched his left shoulder while pulling 300 pounds of ice. Cups were applied, and he returned to work the same day. Two months later, he noticed a moderate swelling of the left shoulder, with slight limitation of motion of the left arm. He recalled having no pain in the shoulder at this time

Fig. 2 (Case 2).—Neuro-arthropathy of peripheral nerve injury origin, showing the condition six months after injury.

and only very slight pain subsequently. He continued with his work for seven weeks longer, when he consulted his private physician for the first time. He was told he had "water on the shoulder," and was referred to the Hospital for Joint Diseases.

Examination.—Feb. 19, 1923, the patient was very robust, well nourished, and of good color. The physical examination

was entirely negative except for the left shoulder girdle, which was considerably enlarged. The superficial veins over the shoulder and the front of the chest were greatly swollen. No discoloration was present, but the skin was tense and glossy over the swelling. Movements of the shoulder were not interfered with except in extreme abduction. No lymph nodes were palpable. A careful neurologic examination revealed no demonstrable abnormalities in either the central or the peripheral neural mechanisms. A blood Wassermann reaction was negative.

A roentgen-ray examination (Fig. 2) revealed the shoulder joint disorganized, with extreme destruction of the head and neck of the humerus, of the distal end of the clavicle and of the end of the acromion process. There was considerable joint detritus present from the destroyed articular ends of the bones forming the shoulder girdle. There was no bone or soft tissue atrophy; on the contrary, there was marked soft tissue tumefaction about the joint. The appearance of the shoulders was characteristic of neuro-arthropathy.

Subsequent Course.—The condition, locally, presented preponderant signs of an extensive malignant tumor. This diagnosis appeared all the more tenable in view of the negative neurologic examination and serologic tests. However, the roentgenograms positively excluded malignancy and were sufficiently characteristic to permit of a positive diagnosis of a neuro-arthropathy, in the face of all other conflicting data. On the basis of the report of the roentgen-ray findings, the patient was treated conservatively and advised to return regularly at two-week intervals for further observation.

Not satisfied, however, with palliative treatment, the patient went to another hospital, where he was examined and roentgenograms were taken. He was advised to submit to an extensive shoulder amputation next day. His relatives were informed that he had cancer and could not possibly live more than eight weeks. He was taken home immediately, and on the next day was taken to another and larger hospital. The condition here also was considered to be malignant and after a few days of observation, an operation was performed on the shoulder, and some of the joint detritus was removed. Radium was inserted into the joint and removed six hours later. The patient remained in the hospital for twenty-seven days.

After examining sections of the excised tissues, Professor Ewing reported them as being nonmalignant.

While in the hospital, the patient began to notice swelling of the right shoulder joint, accompanied by slight discomfort and limitation of motion.

A few days after his discharge from the hospital, he appeared at our clinic. The left shoulder presented a well healed linear scar from the operation, with, however, little change, if any, in the appearance of the immense swelling of the left shoulder girdle. In addition, the same condition but to a lesser degree was present in the right shoulder. Roentgen-ray examination of the right shoulder girdle showed the presence of a neuro-arthropathy of less intensity than that previously observed on the left side.

The patient has been observed at monthly intervals since the operation, and the bilateral condition has remained unchanged in both the physical and the roentgen-ray appearance.

Fig. 3 (Case 2).—Neuro-arthopathy of peripheral nerve injury origin, showing the condition two years after the injury. An operation for removal of joint detritus has been performed during the interval.

The last examination was made, April 15, 1925. There was slight limitation of motion in the left shoulder in extreme abduction, but otherwise a normally functioning shoulder joint. The original swelling was all gone; the large veins were still present. Muscle power was vigorous and undiminished. Crepitus was present in the right shoulder, with a fair range of motion and undiminished pulling, pushing, abduction, rotation, etc. No pain or tenderness was present.

The roentgen-ray examination (Fig. 3) showed little, if any, change in the appearance of either shoulder during the two years from March, 1923. In the interval the patient had been working almost as hard as originally and at the same kind of work. The work was extremely strenuous. He had felt no pain and no fatigue. He had enjoyed good health, slept well, his weight had been the same and he had felt well in every way, except for inability to abduct his left arm completely.

The neurologic examination was essentially negative, with the possible exception of an apparent lack of power in executing various gross upper and lower arm movements. Since the electrical reaction showed no deviations from the normal, and since there was no atrophy and there were no sensory changes, one must attribute this apparent lack of power to the joint condition, since proper fixation of the head of the humerus (which had disintegrated) in the glenoid socket is impossible.

In this connection it may not be inopportune to cite briefly the details of a third case which came under observation but which we are not including in our series on account of a complicating tuberculous factor.

History.—A young man presented himself at our clinic with a markedly swollen elbow that had been injured severely fifteen months before. Roentgen-ray and physical examination after the injury showed no evidence of fractures. Pronounced swelling was present, with distention of the synovial sacs. There was no increased heat in the part, no muscle spasm, nor any significant degree of pain or incapacity.

Roentgen-ray examination showed a typical neurotrophic joint; no atrophy was noted, but considerable joint detritus was present. Aspiration of the joint secured a brown-colored fluid with an admixture of pus. The smear showed only pus cells, but proved to contain tubercle bacilli by inoculation test. The possibility of a tuberculous joint infection superimposed on a neuro-arthropathy was considered for the following reasons: There was no physical or roentgen-ray evidence characteristic of tuberculosis. Physically and roentgenologically, the condition was clearly one of neuro-arthropathy.

A diagnosis of simple uncomplicated tuberculous arthritis is untenable in this case, notwithstanding the presence of tubercle bacilli. We have ventured in this instance to regard the tuberculous infection as a secondary invasion after the development of the neuro-arthropathy for the following reasons: the history of the injury, the rapid and painless development of the symptoms and the characteristic physical and roentgen-ray findings. By way of comparison, we may mention that it has been our privilege to study a secondary tuberculous infection in a typical Charcot ankle joint, which this case simulates in many respects.

TREATMENT

In view of our limited experience with this type of neuro-arthropathy, we are not in a position to suggest treatment with any degree of confidence. It is essentially symptomatic. Physiotherapy, immobilization and operations have been performed but, as far as we can determine, without especial advantages or benefits. We feel that, after the condition has reached a state of equilibrium, operative intervention for removal of joint bodies and possible joint reconstruction is indicated and should prove useful. Beyond this, we can only advise symptomatic and palliative measures.

CONCLUSION

We shall take the liberty to quote again with slight modification from our previous publication: "In the light of the facts heretofore presented, it is our opinion that neuro-arthropathies caused by peripheral nerve injury or other factors not definitely understood occur with more frequency than is usually believed. It is our opinion that these neuro-arthropathies are possibly misinterpreted on account of the absence of demonstrable disease of the central nervous system. In the wake of such misinterpretation, extensive joint operations may be performed unnecessarily as in the case cited. The possibility of neuro-arthropathy should always be considered in obscure or ill defined joint manifestations, even in the absence of cord disease. The etiology may be found in disturbances of the peripheral neural apparatus or other hitherto unknown factors."

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ABSTRACT OF DISCUSSION

DR. REGINALD H. SAYRE, New York: I recall a case demonstrated by my father when I was a student. This man had struck his knee against a trough. He developed a condition which had all the outward and general manifestations of a Charcot's joint, but which my father regarded as being due to the traumatism. I simply put that down to my father's failure to recognize that the man had syphilis. Until hearing this paper this morning, I had concluded that was an error of omission on my father's part, and that he apparently did not know a Charcot's joint when he saw it. Possibly he was wiser than I, and knew it was not a Charcot's joint. The question of operating on supposed malignant joints is interesting. It is somewhat similar to these cases of giant cell tumors which are operated on for amputation on the supposition that they are malignant, which are later found not to be malignant and to do perfectly well with conservative measures. This is a new series of cases which may yield to conservative instead of radical treatment, as we have seen.

DR. A. W. ADSON, Rochester, Minn.: In view of the roentgen-ray findings and the negative neurologic findings, the question might be raised as to whether it is possible that the nerve at the head of the humerus has been injured or that thrombosis of the artery supplying the humerus has occurred rather than a gross lesion of the brachial plexus. The remarkable fact is that both patients made a spontaneous recovery.

DR. W. C. CAMPBELL, Memphis, Tenn.: We have a great many cases in which the brachial plexus has been severed, injured or evulsed at the cord. I do not think I have ever seen atrophic change of this type following such injuries. They are certainly two interesting cases in which the roentgen-ray appearance is very suggestive of Charcot's joint, or of that type of joint. Just what the condition is, I cannot conclude.

DR. CHARLES ROSENHECK, New York: It was my privilege to make the neurologic examination in these cases. One must rid oneself of the traditional conception held forth by Charcot that all types of neuro-arthropathies are the result of central nervous disease, such as syringomyelia or tabes. It is very true that the vast majority of the cases we see are the product of syringomyelitic changes or sclerosis of the posterior columns. Virchow some time later than Charcot found changes of a deleterious character in bones and joints following peripheral nerve injury, but no particular attention was paid to him at that time. It was really the war, with its rich array of neurologic material and peripheral nerve injuries, that brought forth the fact that the so-called Charcot's joint, or the neuro-arthropathy, could exist independent of disease of the central nervous system. As a result of my examination of these two cases I would put the Charcot's joints in three categories: One is the type occurring following central nervous disease, after syringomyelia or tabes; the second is a result of plexus or root injuries; the third is the type under consideration here, in which there is absolutely no evidence of any neural defect. What is the explanation of that? One can readily understand, of course, that certain trophic changes have occurred; but why this occurs here, I do not know. In a previous communication, we hinted at the fact that it might possibly be due to the disturbance in the neural nutrition of the joint, whatever that may mean. It is hypothetic, but it is the best that one can offer. If it is a fact that this occurs, why is it not seen more often? We see a great number of joint injuries and joint infections, but no evidences of neuro-arthropathy. Possibly it is the peculiar nature of the injury and the peculiar constitutional predisposition of the individual that determines this type of neuro-arthropathy, such as one sees in tabetic and syringomyelitic patients. One sees a great many tabetic patients, and there are no evidences of arthropathy.

DR. ERIK ST. J. JOHNSON, Boston: During the past year I have examined a large number of more or less indefinite mysterious yet apparently definite joint cases for the United States government claims at the orthopedic clinic, U. S. Veterans' Bureau, in Boston. These cases included shoulders, elbows, wrists, back, knees and ankles, but chiefly shoulders and knees. In all cases an indefinite story of trauma or infection was present, difficult to prove or make fit together as regards official or legal facts. In most of the cases, roentgen-ray findings were negative, and objective findings few. Subjective findings, including pain, stiffness and weakness associated with swelling of soft tissues, had been recurrent at different periods since discharge from service. These recurrences would invariably mean a loss of earning time and treatment for longer or shorter periods involving all sorts of claims. A most thorough exhaustive examination would fail to reveal any significant pathologic condition during quiescent periods. Active periods were almost always associated with financial and business strain, family matters and often depleted general health with no definite localized toxic focus. In absence of definite proof of disease or injury, I believe that these cases must be classified as neuro-arthropathies with definite decrease of neurotrophic and circulatory tone of the affected joint, dependent rather more on psychomotor circulatory factors as a cause or an aggravation than on clearly demonstrable results of trauma or infection.

DR. H. B. PHILIPS, New York: I do not blame any one for feeling somewhat skeptical, and not accepting everything as stated. We had quite a hard job in firmly establishing the diagnosis of this condition because, as Dr. Rosenheck expressed it, we have to reconsider entirely our concept of neuro-arthropathies—that they may be caused by peripheral nerve injuries; and, as Dr. Johnson stated, the further we go along the more we are going to recognize this condition and find its incidence greater. I should like to quote from the article that "in our experience the incidence of these injuries, due to peripheral nerve injury, is twice as high as syringomyelia." I feel that the condition has been overlooked heretofore because of the error in previous teaching that we can't have neuro-arthropathies without previous central nervous disease.

RELIEF FOR THE PAIN IN CARCINOMA OF THE FACE *

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Extensive carcinomatous involvement of the mouth and cheek presents many difficulties in treatment. Particularly is this true if the malignant growth presses on the sensory nerves in this area. Even if pain is not a prominent factor before treatment is begun, it is sure to be severe afterward. If extensive resections are attempted with the thermocautery, if radium needles or tubes are inserted, or if intensive roentgen-ray exposure is used, the reaction set up is almost inevitably painful. The pain is constant, night and day, without remission. It may not be severe, but because it is ever-present, the sufferer's morale is slowly broken down, he dreads the necessary inspections and manipulation of his wound, and he becomes increasingly difficult to treat. Nowadays, with the educational campaign carried on against cancer, the general public is well informed as to its manifestations and prognosis. Cancer about the oral cavity is a filthy condition at best. Even if there were no pain, the sloughing surface in the mouth, the foul breath, constant salivation and interference with eating would be difficult to bear; but, when coupled with constant pain and the knowledge that cancer is present with all that this implies, it is not strange that these patients form a most pitiful class who tax all our skill to handle successfully.

Pain is their chief complaint. It is to the relief of this pain that our efforts should be directed. If this can be done, proper treatment may be carried through without torturing the patient. He will submit to it willingly. Once pain free, he can take nourishment in normal amounts. His strength and resistance are preserved to aid him in combating his disease. In these cases, in which from experience it is known that the treatment may cause perhaps more suffering than the lesion itself, the proper course to follow is, first, to render the area to be treated pain free by blocking the sensory nerves that supply it. This is easily done. No time need thus be lost in attacking the cancerous region, for the routes along which the sensory pathways are interrupted may be placed well away from it. Once anesthesia is established, we may proceed against the lesion by whatever method we choose, certain that we are not adding to the burden of pain that the sufferer has to bear.

Fig. 1.—Anesthesia following intracranial neurectomy, second and third divisions, fifth nerve; pain in side of the face following a carcinomatous lesion on the cheek; complete relief from pain for eight months, followed by return of pain for one month with death from metastasis.

The trigeminal nerve with its three divisions is the predominant sensory supply of the face. The larger number of painful cancerous growths lie within its distribution; but when the tonsil or base of the tongue is involved, pain may be present deep in the ear or on swallowing. This pain seems due to glossopharyngeal involvement. The recent work of Doyle and Adson [1] on glossopharyngeal neuralgia shows that under these conditions, by section of this nerve, relief may be secured.

When the growth lies below the level of the mandible, the cervical nerves become implicated. Recently, we have seen two cases in which there were large carcinomatous masses in the neck just beneath the jaw. Both patients complained of severe persistent pain in this region. The lesion in each instance involved the deep as well as the superficial structures of the neck, making it impossible to dissect out the cervical nerves as they pass forward over the sternomastoid muscle. Surgery in the region of the growth seemed contraindicated lest new tissue planes be opened up to metastases. Fay has suggested that a laminectomy be performed and the posterior roots of the first, second and third cervical nerves be sectioned intradurally where they leave the cord. This has now been done in two cases, with complete relief of pain. The procedure may seem a formidable one to accomplish the desired result, but experience proves it otherwise. Neither subject was a good operative risk; both were elderly with beginning cachexia, and by a judicious use of local and general anesthesia and close attention to hemostasis, they were carried through successfully. Laminectomy is not a difficult operation. The posterior roots are easily identified and crushed as they leave the cord. We believe this to be the method of choice in relieving pain from malignant growths in the neck which have so involved the structures that dissection of the superficial nerves in the posterior triangle is not advisable.

Fig. 2.—Cautery knife excision of carcinoma of maxillary antrum; following ligatation of external carotid artery, avulsion of the sensory root of the fifth nerve; no anesthesia required for excision of growth or subsequent dressings. Patient alive and pain relieved five months after procedure.

Since by far the greater number of subjects with painful cancerous lesions of the face refer the pain to the trigeminal distribution, it is with this nerve or its three terminal divisions that we have most frequently dealt. In this series of thirty-five cases (Table 1), in only seven was pain located outside this area. Six of the patients complained of pain in the ear, behind the ear and on swallowing. In reviewing the cases it seems as though in these instances section of the glossopharyngeal nerve should have been performed. Successful injection of the second and third divisions of

* Read before the Section on Stomatology at the Seventy-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., May, 1925.

* From the Neuro-Surgical Clinic of the University of Pennsylvania Hospital, and the Post-Graduate Hospitals of the University of Pennsylvania.

1. Adson, A. W.: Surgical Treatment of Glossopharyngeal Neuralgia, Arch. Neurol. & Psychiat. **12**: 487 (Nov.) 1924.

the trigeminus and avulsion of its sensory root did not afford the patients much relief. In this connection, it must be remembered that in these cases there may be two types of pain. The major suffering may be referred to the lower jaw or tongue, and may be checked by blocking the mandibular division with apparent freedom from pain for a short period. Less pain remains when the patients swallow, and a dull ache in the ear is frequently noted. These symptoms were present in the beginning but were masked by the greater pain in the jaw or tongue. Because of their persistence, they become as distressing as was the pain that has been relieved. The anesthesia produced by the injection eventually may actually accentuate the deeper agony. Lesions of the base of the tongue or the pillars of the tonsil most commonly cause aural or pharyngeal pain.

TABLE 1.—*Summary of Cases*

Location of Growth	Number of Cases	Treatment	Result
Maxillary antrum and upper jaw	14	Alcohol injection, third nerve	Pain relieved (2 cases)
		Avulsion of sensory root	Pain relieved; died of meningitis, 10 days (1 case)
		Alcohol injection, second and third nerves	Pain relieved (2 cases)
		Alcohol injection, second nerve	Pain relieved (2 cases)
		Alcohol injection, second and third nerves	Pain relieved, 50 per cent. (1 case)
		Avulsion of sensory root	Pain relieved (2 cases)
		Alcohol injection, second nerve	Pain not relieved; no anesthesia obtained (4 cases)
Postethmoid cells and maxillary antrum	1	Avulsion of sensory root	Pain relieved, 60 per cent.
Cheek, skin	3	Avulsion of sensory root	Pain relieved (2 cases)
		Intracranial	
		Neurectomy, second and third nerves	Pain relieved (1 case)
Cheek, mucous membrane	1	Alcohol injection, third nerve	Pain relieved, 60 per cent.
Tongue	5	Alcohol injection, third nerve	Pain relieved (4 cases)
		Alcohol injection, first and third nerves	Pain relieved (1 case)
Inferior maxilla	5	Alcohol injection, third nerve	Pain relieved (3 cases)
		Alcohol injection, second and third nerves	Pain relieved (1 case)
		Alcohol injection, third nerve	Pain relieved, 75 per cent. (1 case)
Tongue and floor of mouth	10	Alcohol injection, third nerve	Pain not relieved (4 cases)
		Alcohol injection, third nerve	Pain relieved, 50 per cent. (1 case)
		Alcohol injection, third nerve	Pain relieved (1 case)
		Avulsion of sensory root	Pain relieved, 75 per cent. (1 case)
		Avulsion of sensory root	Pain not relieved (1 case)
		Avulsion of sensory root	Died (1 case)
		Alcohol injection, third nerve	Pain not relieved; no anesthesia obtained (1 case)

In dealing with pain referred to the trigeminal distribution, intracranial neurectomy is the procedure of choice. Direct exposure of the nerve roots makes it certain that they have been cut and that the maximum benefit will be obtained. Peripheral injection is more frequently employed, for patients dread the formal operation. Injection of the terminal divisions may be difficult in the presence of a malignant lesion, since the normal course of the nerve is often distorted by the pressure of the growth. The technic of injection will not be described. It has been discussed at length elsewhere.[2] In this series, twenty-four patients have been injected, with complete relief of pain in seventeen. In four, a decrease in pain resulted. Three were unaffected, although the typical anesthesia of a successful injection was produced. In ten cases, we were unable to reach the nerve, and no anesthesia or relief of pain followed (Table 2). In five of these, operation was subsequently done with complete freedom from pain in three and partial relief in one (Table 3). One patient was not relieved. Five patients were subjected to operation as a primary measure, three of whom were completely relieved. One, who died on leaving the operating room, had been given a local anesthetic and the ganglion exposed and injected with 2 c.c. of 10 per cent. cocain. Up to that time, his condition had been good, but within fifteen minutes of the cocain injection, he suddenly stopped breathing. We feel that the cocain may have traveled back from the ganglion along the sensory root and affected the respiratory centers. It was a fault in technic and should not be held against the operation. A second patient died ten days after operation, from meningitis. The malignant growth had involved the ethmoid cells and the base of the skull over them. This may have been the source of the infection. The operative exposure of the gasserian ganglion is simple. Particularly is this true if the external carotid has been ligated, often necessary if extensive fulguration of the face or tongue is to be attempted. External carotid ligation controls bleeding from the temporal and middle meningeal artery and makes access to the ganglion practically bloodless. Local anesthesia should be used, particularly if there is a sloughing surface within the mouth.

TABLE 2.—*Results in Twenty-Five Cases*

Division of Nerve Injected:	Successful	Improved	Unsuccessful	Total
Third	11	3	5	19
Second	3	.	4	7
Second and third	2	2	.	4

TABLE 3.—*Results in Ten Operative Cases*

4 living, pain-free
2 dead, pain-free till death; lived eight months
1 pain-free ten days; died of septic meningitis
1 dead; partially improved; lived two months
1 dead; operation
1 dead; lived three months; no relief of pain

If the malignant growth is situated superficially within the trigeminal area, the results from nerve block are very much more satisfactory than when the deeper areas of the face and mouth are involved. If the accessory sinuses, especially the ethmoid and sphenoid or the floor of the mouth, are the site of the lesion, the prognosis for complete relief should be very guarded. Of the thirty-five patients in this series, twenty-one were entirely freed from pain, six were much improved, and eight showed no change. In five

2. Grant, F. C.: Anatomic Study of Injection of Second and Third Divisions of Trigeminal Nerve, J. A. M. A. **78**: 794 (March 18) 1922; Alcoholic Injection of Second and Third Divisions of Trigeminal Nerve, ibid. **78**: 1780 (June 10) 1922.

of this last group, the lesion was situated in the floor of the mouth with involvement of the tonsillar pillar, and three had extensive degeneration in the maxillary bone and adjacent accessory sinuses. These three subjects refused further treatment after attempts at alcohol injection failed. Among the twenty-one patients

Fig. 3.—Anesthesia following section of posterior nerve roots of first, second and third cervical segments: Patient had a large carcinomatous mass involving the cervical lymph glands and deep structures; there was continuous pain referred to the cervical region. Complete relief followed section of the first three cervical segments of the posterior nerve roots.

completely relieved, nine died peacefully from metastasis within eighteen months following injection; seven are pain-free and receiving treatment. Five are apparently cured two years after treatment. In small painful lesions, with a fair chance of complete removal if vigorous treatment is instituted, nerve blocking by alcohol injection is especially valuable. Once the lesion is healed, the pain disappears. If subsequently the anesthesia from the injection wears off, it has done its work and the face regains its normal sensation. Of the two patients relieved by section of the first, second and third cervical nerves following laminectomy, Fay's patient died shortly in comfort. Three weeks after operation, our patient's suffering had ceased, and we feel that the last six months of her life will not be one long agony.

Prior to our intervention, almost all of these patients had been receiving large doses of morphin. If, after nerve block, it is no longer necessary for the sufferer to use morphin or any of its derivatives to sleep, when subjectively he admits he has no more pain spontaneously or on manipulation of the lesion or during subsequent treatment directed toward its removal, we term that result a success. After relief, these sufferers are the most grateful class of patients that we meet. It is the constant gnawing pain, without remission or let up, day or night, that wears down their nerve and stamina and causes them to turn to opiates for relief. And many patients, even if the carcinoma is controlled, are still drug addicts. Relief of pain by successful injection prevents this misfortune.

Nerve blocking of the branches of the trigeminus for the relief of pain from cancerous lesions about the face is an act of mercy. It does not cure the lesion. Often that is impossible, but it makes the sufferers' last days comfortable. If a man or woman is doomed to die from cancer of the face—and it is a slow, lingering, miserable way to perish—it is cruel for us to deny them any treatment that may ease them on their way and relieve even a part of their anguish.

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ABSTRACT OF DISCUSSION

DR. GEORGE E. PFAHLER, Philadelphia: In the treatment of malignant diseases about the mouth and accessory sinuses, it is always necessary to use all the methods at our command to accomplish good results. Unfortunately, almost all these patients come at a very late stage, and in the late stages they suffer from severe pain. As Dr. Grant has well said, this pain is constant and often it is extremely bad. It keeps the patient awake at night, and he soon loses strength and fighting qualities. If one gives morphin, the general functions of the organism are upset and one loses ground in that respect, so that from every standpoint I look on this method as a tremendous advance, and the assistance given by Dr. Grant in patients that I have been called on to treat has been very great indeed. It

Fig. 4.—Same patient as in Figure 3: anesthesia in posterior cervical region.

is really a pleasure to see the results that are obtained from this method of securing anesthesia. In most of the cases, Dr. Grant has been able to obtain relief from pain by the alcoholic injection, but the last patient that he showed on the screen, for example, did not get relief from the alcoholic injection, and we then proceeded with more extensive operations, without regard to any general anesthesia or any other local anesthesia. Dr.

Grant did not mention the fact that I have since operated on this patient for two local recurrences, under electrocoagulation, without any sensation on the part of the patient; these operations occurred three and four months after the primary operation for resection of the nerve within the cranial cavity. I wish Dr. Grant had showed the picture of the same man in an earlier stage. In the view shown, he was well nourished, had returned to business as a traveling salesman, and was attending to his work every day. Before the operation, he was emaciated and weak, and it looked as though we were going to fail. Of course, ultimately we may fail to get the malignant disease cured, but we certainly have given him tremendous relief. Stomatologists particularly should give the greatest attention to the early ulcerations that develop about the mouth. Any ulcer or sore about the mouth that does not heal up within two weeks must be considered in the light of a possible cancer.

DR. HENRY K. PANCOAST, Philadelphia: Let me stress the point just brought out by Dr Pfahler. The radiologist probably sees more cases of advanced carcinoma of the mouth than any one else, and all these cases had a small beginning. A large percentage of them come for treatment when they are very far advanced. It is unfortunate that pain is a prominent symptom in the far advanced cases, but it is still more unfortunate that pain is not an early symptom, for probably many of them would be diagnosed earlier if that were the case. Stomatologists and dentists have more opportunities to detect cases of early carcinoma than any one else, certainly more than the general practitioner. In advanced carcinomas of the maxillary sinuses, the cheek, the lower jaw, the tongue and the floor of the mouth, and particularly in the metastases that occur later in the neck, intense pain is one of the late symptoms. This pain interferes with treatment and keeps the patient awake at night; he is unable to eat, and so starves. It is surprising how little food these poor sufferers get along with. Any procedure that can relieve the intense pain that saps the patient's vitality is certainly to be accepted. Morphin is unfortunately not a good drug to use if one can avoid it, because it does not work all the time, the patient has to take increasing doses, and it destroys his appetite. It is certainly most gratifying to see some of these patients completely relieved from pain. One of the first patients to receive an alcohol injection had a large carcinoma of the floor of the mouth. After the injection we were able to remove a large part of the growth by electrodesiccation without any other anesthetic. It was only when the midline was approached that he began to feel pain and we had to resort to infiltration of the tissues to complete the operation. In another case of carcinoma of the tongue, in a physician who had spent many sleepless nights and had taken morphin in increasing doses, Dr. Grant gave an alcohol injection into the fifth nerve, and after leaving the operating room, the patient came down to our department, lay down on the table and was asleep immediately. Such examples are most gratifying to see. It is not only for the sake of relief from pain that this procedure is advisable, but, having been relieved from pain, the patient can eat, and we can often tide him over the critical period. There is no doubt that some patients have recovered from fairly advanced carcinomas of the mouth because they have had relief from pain, and they could not have recovered otherwise. The great majority of patients advanced in the course of the disease have their surgical procedure performed for relief from pain simply as a humanitarian procedure.

DR. T. L. GILMER, Chicago: I should like to ask Dr. Grant whether he has noticed that there has been more pain in those cases in which radium has been used in postoperative treatment and also when radium has been used primarily without a surgical operation. My experience leads me to believe that there is more pain following the use of radium.

DR. B. R. KIRKENDALL, Columbus, Ohio: I should like to ask Dr. Grant whether it is necessary to repeat these injections of alcohol to keep up the anesthesia.

DR. F. A. FIGI, Rochester, Minn.: Malignant lesions within the distribution of the ninth cranial nerve, particularly those of the base of the tongue and hypopharynx, as a rule, require radium treatment rather than surgical removal on account of their inaccessibility. This treatment is always followed by severe and at times excruciating pain lasting for several weeks and frequently for many months. Anything that will relieve this would certainly be a boon. Considering the very questionable prognosis in this group of cases, however, and the severity of the procedure of avulsion of the glossopharyngeal nerve, I should question the advisability of Dr. Grant's suggestion in this regard.

DR. H. M. SELDEN, New York: I should like to ask Dr. Grant what objection he has to intra-oral injection of the third, fourth and fifth nerves.

DR. F. C. GRANT, Philadelphia: I believe there is more pain following irradiation than other methods of treatment of mouth cancer. One gets a very marked reaction after the use of radium, whether it is applied by the pack or by needles. For that reason, my thought is that either surgery or the electrocautery is better as a primary procedure. Of course, I speak from entire ignorance. I do not know anything about the roentgen ray or radium part of it, but I do feel that, following radium, these patients do have a severer reaction, and therefore probably suffer more pain. With regard to Dr. Kirkendall's question, if we are successful in introducing alcohol directly into the sheath of the nerve, we get anesthesia for from eighteen months to two years. Most of the patients that we see (almost all the cases are very far advanced) do not live that long. Of thirty-five cases, only five have gone beyond the two-year limit. All the rest are within the two-year limit or are dead. The avulsion of the glossopharyngeal nerve is unquestionably a severe major operation. It requires a suboccipital craniectomy. The posterior fossa of the skull is entered, the cerebellum retracted posteriorly and the glossopharyngeal nerve hooked out. I have opened the posterior fossa on many occasions, but I have never gone in after the glossopharyngeal nerve. It can be done under local anesthesia very readily. If a patient is suffering intense agony and is utterly miserable, the situation should be explained to him. If he dies as a result of the operation, he at least perishes quickly and comfortably. The probabilities are that he would not live more than six months. If the operation is successful, he will be pain-free for that time. It must be remembered that this procedure has nothing to do with retarding the growth of the cancer. All we attempt to do is relieve the pain. As far as the intra-oral injections are concerned, I have had no experience with them. We have had moderately good success with the external injection through the cheek. But if a small lesion is localized in the upper or lower jaw, where by striking the inferior dental or superior dental nerve one gets the necessary anesthesia, the intra-oral injection is entirely satisfactory. The majority of the cases that we see involve the entire branch, either the second or the third nerve, and for that reason it seems more efficient to strike those nerves at the points at which they leave the skull before they are broken up into their peripheral branches.

Infective Processes in Mental Disorder.—The point I wish to emphasize is that the granulations which cause the bony destruction are infected and constitute a focus of deep infection, drainage being closed by tough swollen mucoperiosteum and a tooth or stump. Hence the products of septic activity —toxins, possibly living bacteria and digested tissues, have no channel of escape from the focus. The tooth acts as a plunger, and injects this poisonous matter into the lymph space under the mucoperiosteum. The neighboring tissues are poisoned by the process, and the periodontal membrane of the next tooth becomes infected. The extraction of the teeth is only part of the treatment—the infected tissue is left behind and has to be dealt with. These chronic septic processes cause a chronic osteomyelitis spreading under the mucoperiosteum and forming deep hidden foci of infection which persists in the jaws after tooth extraction, and it is for this reason that every case should receive careful consideration before the application of dentures. In one case confusional attacks reappeared after the application of dentures, but ceased on their withdrawal. Dentures, unless carefully used, can do much harm by causing fresh infections.—Graves, T. C.: *J. Ment. Sc.* **71**:662 (Oct.) 1925.

THE INTERCONVERTIBILITY OF "ROUGH" AND "SMOOTH" BACTERIAL TYPES

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The existence in certain bacterial stock cultures of two types of cells, characterized respectively by the formation on agar plates of "rough" (R) and "smooth" (S) colonies, has been demonstrated for a number of bacterial groups (Shiga bacillus, paratyphoid and typhoid bacilli, *Bacterium lepisepticum*, pneumococci, hemolytic streptococci, cholera vibrios and *Proteus*[1]). Under ordinary conditions, transfers from the S and R colonies breed true. The importance of the two types of colony formation is shown by the correlation of characters: subcultures from smooth colonies form stable suspensions in salt solution, while the cells from rough colonies tend to agglutinate spontaneously. The acid agglutination optimum is higher for the S than for the R type; the S type is more virulent than the R, and there are significant serologic differences.

In the examination of more than a hundred strains in my collection of paratyphoid bacilli,[2] there has been in all cases a correlation between the colony characters, the stability of suspensions in salt solution, and the optimum of acid agglutination. In all instances in which the virulence has been tested, the S strains have been found more virulent than the corresponding R strains.[3]

In well cared for laboratory collections, the S type is the more common, while in old cultures that have been allowed to dry up more or less, the R type often predominates. Several observers have been inclined to regard the S form as the "normal" type and the R form as a derivative perhaps due to degenerative change. De Kruif[4] considers the S→R transformation of *Bacterium lepisepticum* to be a mutation. There is no doubt that, under ordinary conditions of cultivation, the R type may develop from an apparently pure S type fairly readily. Most of the work on convertibility has been carried out with cultures transferred in the usual way from one tube or plate colony to another and is hence open to the objection that an environmental selection and not a transformation has occurred. De Kruif showed that a single-cell strain of the S type could give rise to the R type, but believed that the R type did not revert to the parent form. Most observers have found it difficult or impossible to convert the R into the S type. Schütze[1] considered it "apparently impossible to reconvert a rough into a smooth." Griffith,[1] however, states that R strains of pneumococci may revert in all respects to the S type or may remain unchanged after many generations in subculture in plain blood broth. Both of these observers were working with ordinary cultures and not single-cell strains. Savage and White,[5] who have recently reported a series of observations on organisms of the *Salmonella* group, are of the opinion "that rough variation is probably a permanent and irreversible change." Reimann,[6] who used single-cell cultures of Type I pneumococcus, was never able to isolate S organisms from the pure R strain and did not succeed in rendering a pure R strain type-specific and virulent for animals.

I have found it possible after single-cell isolation (Barber method) to originate at will not only the R type from a single-cell S paratyphoid strain, but also the S type from a single-cell R. Two representative cultures used for this purpose were *B. paratyphosus* B strains of the Schottmüller type[7] isolated from the blood in paratyphoid fever in man. The proportion of S to R colonies on plates made from the original stock cultures was about 10:1 in one strain, and 5:1 in the other. After single-cell isolation (from two to four cells each from pure R and S colonies), the single-cell strains were subjected to the usual biochemical tests for the members of the group and were proved to agree in all respects with the group and with one another. The R and S types differed sharply, however, in the biologic characters already described, and after repeated platings each remained true to its own type.

A representative experiment showing the conversion of S into R is given in Table 1.

TABLE 1.—*Results of Experiment Converting S Bacterial Types into R*

	Single Cell Isolation Strain 209	Single Cell Isolation Strain 210
After 2 days	S	S
After 7 days	S : R 10 : 1	S : R 5 : 1
After 10 days	S : R 10 : 1	S : R 5 : 1
After 16 days	S : R 1 : 1	S : R 1 : 1
After 28 days	S : R 1 : 5	S : R 1 : 2

The culture was kept without transfer at 37 C. in beef extract broth (p_H 7.0); and plates were made at intervals.

Starting with the R type, transfers were made twice daily in veal infusion broth (p_H 7.4) incubated at 37 C., as shown in Table 2.

TABLE 2.—*Results of Experiment Converting R Bacterial Types into S*

	Number of Transfers	Strain		
		223	239	355
After 2 days	7	R	R	R
After 5 days	12	R	R	R
After 9 days	20	R	R	R
After 16 days	32	R (S ?)	R	R : S 2 : 1
After 25 days	50	R : S 10 : 1	R (S ?)	R : S 1 : 1
After 36 days	72	R : S 3 : 1	S ?	R : S 5 : 1

It thus appears from the tables that in some single-cell strains of the R type frequent transfers in veal infusion broth lead to the appearance of the S type; the proportion of S colonies developing on plates is irregular.

In virulence tests, mice and guinea-pigs were inoculated intraperitoneally (mice, 100 million, guinea-pigs,

1. Arkwright, J. A.: J. Path. & Bact. **24**: 36 (Jan.) 1921. Schütze, H.: J. Hygiene **20**: 330 (Dec.) 1921. De Kruif, P. H.: J. Exper. Med. **33**: 773 (June) 1921. Griffith, F.: Reports on Public Health, No. 18, Ministry of Health, London, 1923. Cowan, M. L.: Brit. J. Exper. Path. **4**: 241 (Oct.) 1923. Shousha, A. T.: J. Hygiene **4**: 241, 1923.
2. Jordan, E. O.: J. Infect. Dis. **20**: 457 (April) 1917; **36**: 309 (March) 1925.
3. Topley, W. W. C., and Ayrton, J.: J. Hygiene **22**: 234 (Jan.) 1924.
4. De Kruif, P. H.: J. Exper. Med. **35**: 561 (April) 1922.
5. Savage, W. G., and White, P. B.: Special Report 91, Medical Research Council, 1925.
6. Reimann, H. A.: J. Exper. Med. **41**: 587 (May) 1925.
7. Jordan, E. O.: J. Infect. Dis. **33**: 567 (Dec.) 1923. The cultures are fully described under the numbers 209 and 210 in my earlier papers.

250 million) with the original single-cell strain carried on agar as usual (355 R), with the R type from rough colonies on plates from the thirty-second test tube generation in veal broth (355 R → 32 → R) and with the S type from the same plate as the latter (355 R → 32 → S). All the mice and guinea-pigs inoculated with 355 R and 355 R → 32 → R were not visibly affected and were alive after two weeks; those inoculated with 355 R → 32 → S all died, the mice within twenty-four hours, the guinea-pigs after five days.

COMMENT

Single-cell strains of paratyphoid bacilli of the R and S type can more or less regularly be made to yield cells of the opposite type by appropriate treatment. A nonvirulent strain can at will be converted into a virulent, and the virulent strain so produced possesses certain correlated characters, such as agglutinability and colony type formation, which distinguish it from the parent cell.

THE USE OF HIGH CARBOHYDRATE DIETS IN THE TREATMENT OF DIABETES MELLITUS*

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During the past year, we have been using more liberal amounts of carbohydrate in our diabetic diets. Except for the omission of sugar and of foods actually sweetened with sugar, these diets are essentially normal, containing white bread, potatoes, milk and large servings of fruit. With some diets we have included even sucrose. Whereas our former diets contained, in addition to adequate protein, as high as from 2 to 2.5 gm. of fat to each gram of carbohydrate, these new diets contain 2 or more grams of carbohydrate to each gram of fat.

Ever since the discovery of insulin by Banting and Best,[1] we have hoped to be able to use better diets; but in the beginning, experiments were not practicable because of the early limited supply and the resulting high cost. Previous to the use of the present diets, we were not fully satisfied with the results from insulin, because many of the patients with a severer form of diabetes were not restored to the full measure of mental and physical activity. The weight of the patients could be easily restored, but many of them were still sluggish and had a soft, flabby appearance. Even such patients were usually satisfied, because they felt so much better than they did in the preinsulin days.

Our first experiment was instigated, however, to satisfy a discontented patient:

A man, aged 51, who, in the past, had been able to do big things in the business world, was admitted to the clinic from Denver, March 9, 1924, with the usual symptoms of a mild diabetes. His weight was normal at 140 pounds (63.5 kg.) net. There were no complications except for a very mild chronic interstitial nephritis, as evidenced by an occasional hyaline cast in the urine. The highly intelligent cooperation of both him and his wife enabled them to learn the diabetic routine rapidly. At the end of three weeks, he was discharged from the hospital on a diet containing 120 gm. of carbohydrate, 80 gm. of protein and 195 gm. of fat, totaling 2,555 calories. He was sugar free, had a normal blood sugar and did not take insulin, nor did we advise its use.

He returned to the clinic, October 20, to be carefully checked up, stating frankly that he had gained nothing by the six months of treatment, and that there must be something wrong either with him or with our diet. He had adhered faithfully to the weighed diet prescribed. He had remained constantly sugar-free, and his blood sugar had been normal whenever it had been taken. His weight had remained constant. We felt that he had managed his case as well as it could have been done. For theoretical reasons, we advised the use of a diet with a slightly higher proportion of carbohydrate to fat and small doses of insulin, although his diet then did not contain as much fat as was usually given. He refused, however, to be annoyed with insulin injections and returned home after a stay of seven days.

The patient returned to the clinic, November 16, with the intention of staying many months in a warmer climate at a lower altitude, in the hope that a long rest would bring about the desired improvement. In the meantime, although sugar-free, his blood sugar had risen slightly above normal, and on our advice he had reduced the carbohydrate and raised the fat so that his diet contained 80 gm. of carbohydrate, 88 gm. of protein and 207 gm. of fat, totaling 2,535 calories. This diet brought about no improvement in his blood sugar, and he felt even worse than he did before. On this admission, we again advised the slightly higher carbohydrate diet with small doses of insulin. This he willingly agreed to. We gave him a diet consisting of 119 gm. of carbohydrate, 78 gm. of protein and 200 gm. of fat, totaling 2,588 calories, with 30 units of insulin daily. He reported that on this diet he felt better, and with his approval we planned a radical experiment with a high carbohydrate diet. December 26, we gave him a diet containing 278 gm. of carbohydrate, 85 gm. of protein and 117 gm. of fat, totaling 2,505 calories. Within twenty-four hours, he noticed a change, and eight days later he felt so much better that he left the hospital and returned to work. We found that on this diet, 112 units of insulin[2] was required to keep him sugar-free and with a normal blood sugar. He has written us a letter each month, and again and again has asserted that the diet with insulin has fully restored him to his former prediabetic state of mental and physical activity. He has been able to reduce his insulin dosage gradually, and Aug. 16, 1925, still using the same diet, he was taking only 34 units a day.

The routine treatment of diabetes with the high carbohydrate diets does not differ in any way from the usually accepted methods, except that more insulin is required. We believe that a larger proportion of patients would be benefited if they began its use. All will agree that each patient should be freed from, and kept free from, the acetone type of acidosis; that he should be fully nourished; that he should be kept sugar-free, and that the blood sugar should be maintained at a normal level.

With our present diet plan, in addition to adequate protein, we are using 2 or more grams of carbohydrate to each gram of fat. As a routine we divide the total amount of food into equal amounts for each of the three meals of the day. Two doses of insulin are used, five eighths of the total dose being given from fifteen to thirty minutes before breakfast, and three eighths at the same interval before supper, with minor variations as necessary. When the insulin dosage is small, one dose may be given daily with two large meals following the insulin, and no insulin before the smallest meal.

We keep a patient sugar-free to our subnormal urine sugar test; that it, instead of using 8 drops of urine to

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* From the Potter Metabolic Clinic, the Research Department of the Santa Barbara Cottage Hospital.
* This work was supported in part by a special insulin grant from the Carnegie Corporation of New York.
1. Banting, F. G., and Best, C. H.: The Internal Secretion of the Pancreas, J. Lab. & Clin. Med. 7:251 (Feb.) 1922.

2. The insulin (Insulin-Lilly, U-80) for this and many other similar experiments was furnished free to this clinic by Eli Lilly & Company of Indianapolis.

5 c.c. of Benedict's solution we use 16 drops of urine. When unusually small or unusually large amounts of urine are passed, we use proportionately fewer or more drops for the test.[3]

Table 1 represents the routine diet formulas in use at the present time. These are varied somewhat to suit the individual needs of each patient. If he gains weight too fast, he usually prefers to eliminate a part of the fat only, thus increasing the ratio of carbohydrate to fat.

Diet 1 is our acidosis diet and consists of 90 gm. of oatmeal (dry weight), 300 c.c. of skim milk and 1,000 c.c. of fruit juice. The oatmeal and skim milk are divided into three meals, and the fruit juice is given both with and between meals. In general, orange juice seems to be the most suitable, and often, especially if there is a tendency toward nausea and vomiting, lemon juice or grapefruit juice is mixed with the orange juice.

TABLE 1.—*Routine Diet Formulas*

No.	Diet	Carbohydrate	Protein	Fat	Calories
1	Acidosis	257	28	12	1,248
2	1,000 calories	95	48	49	1,013
3	1,500 calories	146	69	71	1,499
4	2,000 calories	202	79	97	1,997
5	2,200 calories	217	93	107	2,203
6	2,500 calories	245	100	124	2,496
7	3,000 calories	301	116	150	3,018

When the patient is free from acidosis, the remaining diets are used in the order listed, up to a maintenance level. Ample insulin is given, but no attempt is made to render the patient sugar-free on the acidosis diet. The patient is desugarized on Diet 2. He is kept comparatively quiet while on the low diet, lest he burn his body fat and thus precipitate an acidosis. If the case is not too severe, and especially if there is no acidosis, we often start with the diet at the supposed maintenance level, using either no insulin or a small dosage and gradually raising it to the required level. We thus eliminate the irksome days of partial starvation and inactivity.

Table 2 presents a typical diet as served. Potatoes are generally used as the 20 per cent. vegetable. Attention is especially directed to the large servings of fruit.

TABLE 2.—*Standard Diet of 2,200 Calories* *

Type of Food	Breakfast	Dinner	Supper	Grams
3 per cent. vegetable	...	250	250	500
6 per cent. vegetable	...	...	100	100
20 per cent. vegetable	...	125	...	125
Eggs	2	...	...	2
Bacon	15	...	...	15
Lean meat (15 per cent. fat)	...	75	75	150
Butter	10	15	10	35
Bread	45	30	30	105
20 per cent. cream	33	33	33	100
10 per cent. fruit	250	250	300	800
Dry cereal	20	...	...	20
Whole milk	100	...	200	300

* Carbohydrate, 217; protein, 93; fat, 107; calories, 2,203.

For convenience in estimating the caloric value of foods, the lower percentage vegetables and fruits are placed in 3, 6, 9 and 10 per cent. groups. This system is simple, since the average rather than the precise value of foods is used, and yet seems to be sufficiently accurate for all clinical purposes.

We have now used these high carbohydrate diets with more than 150 patients, new and old. Table 3 gives some typical case summaries. These summaries were intentionally selected for comparative purposes from the series of our first hundred insulin cases, since these patients have been longest studied. Because of the severity of the disease, they have been either in, or in close proximity to, the clinic practically all of the time.

COMMENT

In an attempt to determine the exact relation of insulin to food, a large number of diet ratios were tried with Case 1. In the third, fourth and fifth diets, the "total quantity of glucose introduced into the body by a given food combination" [4] and the calories were kept constant. The fat was kept fairly constant, and the carbohydrate and protein were varied. The insulin requirements remained constant at 80 units a day.[5] At no time while these diets were being used did the patient pass sugar in the urine or become too sugar-free. It must be borne in mind, however, that patients may frequently be overdosed to the extent of 20 units a day before symptoms of hypoglycemia appear. We believe that, when the blood sugar is kept lower than normal, the pancreas, relieved of the stimulating effect of a normally high blood sugar, will rest to a certain extent. For this reason, we purposely overdose our patients by

TABLE 3.—*Summary of Ten Typical Diet Charts*

No.	Sex*	Age	Weight, Pounds	Date	Diet: Carbohydrate	Diet: Protein	Diet: Fat	Diet: Calories	Insulin Units
1	♂	58	92	5/31/22	24	34	68	844	0
			125	7/15/23	91	79	257	2,993	104
			151	3/25/24	91	79	193	2,417	80
			154	4/ 1/24	54	145	180	2,416	80
			153	4/ 9/24	113	40	200	2,412	80
			153	9/ 7/24	86	88	189	2,397	80
			148	1/10/25	143	87	141	2,189	166
			146	2/ 9/25	281	72	71	2,051	159
			145	3/23/25	412	75	11	2,047	183
			144	4/17/25	281	72	71	2,051	158
			140	5/ 4/25	281	72	71	2,051	130
			139	6/ 5/25	207	72	104	2,052	101
4	♀	24	91	7/24/22	29	43	75	963	0
			130	6/13/23	78	66	173	2,133	54
			143	3/30/25	196	81	84	1,864	100
			146	8/ 1/25	195	81	65	1,689	88
9	♀	53	84	8/17/22	20	57	92	1,136	0
			123	7/15/23	77	65	182	2,206	68
			137	3/ 9/25	179	82	85	1,809	73
			134	8/ 4/25	175	76	86	1,778	80
10	♂	30	103	11/ 9/22	97	56	213	2,529	76
			154	7/15/23	86	67	273	3,069	90
			167	7/15/25	245	100	124	2,496	106
15	♂	10	59	11/ 8/22	55	43	118	1,454	60
			81	7/15/23	80	55	179	2,151	69
			96	11/27/24	67	85	174	2,174	122
			102	8/ 6/25	200	80	84	1,876	110
35	♀	23	78	12/ 2/22	35	38	83	1,039	24
			123	6/11/23	81	81	221	2,637	78
			153	2/28/24	78	76	177	2,200	88
			148	8/ 6/25	259	81	70	1,990	86
43	♂	41	107	12/12/22	54	46	118	1,462	0
			124	6/ 9/23	78	66	223	2,583	36
			132	9/18/24	65	88	179	2,223	43
			136	8/ 6/25	231	83	96	2,120	68
46	♂	25	100	12/28/22	35	38	92	1,039	10
			120	6/ 8/23	68	92	180	2,240	79
			149	3/ 4/25	202	84	103	2,071	143
			150	7/28/25	202	84	103	2,071	126
54	♀	6	32	1/14/23	35	41	85	1,009	28
			34	6/ 9/23	35	38	78	994	4
			49	2/28/24	47	44	94	1,210	20
			49	3/ 5/25	148	67	75	1,535	40
			52	8/ 7/25	145	65	60	1,380	28
58	♂	12	108	1/23/23	35	38	83	1,009	34
			112	5/12/23	77	65	182	2,206	88
			114	9/10/24	78	89	202	2,486	72
			110	3/13/25	217	93	107	2,203	125
			127	6/ 1/25	217	93	107	2,203	84

* In this column, ♂ indicates male; ♀, female.

3. Sansum, W. D.; Blatherwick, N. R.; Smith, Florence, H.; Long, M. Louisa; Maxwell, L. C.; Hill, Elsie; McCarty, Ray; and Cryst, J. H.: The Treatment of Diabetes with Insulin, J. Metabol. Res. **3**: 641 (May-June) 1923.

4. Woodyatt, R. T.: Objects and Method of Diet Adjustment in Diabetes, Arch. Int. Med. **28**: 125 (Aug.) 1921.

5. Sansum, W. D.; Blatherwick, N. R.; Maxwell, L. C.; Hill, Elsie; Bell, Marion; Berger, John; and Sahyun, Melville: The Present Status of the Treatment of Diabetes with Insulin, California & West. Med. **22**: 321 (July) 1924.

at least 10 units a day. This slight overdosage probably accounts for the fact that patients remain constantly sugar-free to a subnormal degree, even when foods are used at their average values. In this series of diets, the insulin requirement seemed to be proportional to the glucose of the diet. With the eighth to the twelfth diets inclusive, the protein and calories were kept constant, but the carbohydrate and fat were varied. Here the insulin requirements increased as the carbohydrate was raised, but not in proportion to the glucose of the diet, as we formerly believed.

Any diet may be divided into its sugar formers and fat formers. The sugar formers of a diet are 100 per cent. of the carbohydrate, 58 per cent. of the protein and 10 per cent. of the fat. The fat formers of a diet are 46 per cent. of the protein and 90 per cent. of the fat, although in the finer sense carbohydrate may be considered as a fat former. Nearly all will agree that insulin is concerned in the burning of the sugar formers of the diet. There appears to be increasing evidence that insulin is also concerned directly in the burning of fat formers. Case 9 illustrates something that we have observed many times. The original diet contained 77 gm. of carbohydrate, 65 gm. of protein and 182 gm. of fat. The high carbohydrate diet contains 179 gm. of carbohydrate, 82 gm. of protein and 85 gm. of fat, or 97 gm. less of fat and 102 gm. more of carbohydrate, with 20 gm. more of protein. The insulin requirement was about the same, with 73 units on the new diet and 68 units on the old. In many instances, both with insulin and noninsulin patients, we have frequently substituted carbohydrate for fat without the appearance of sugar in the urine in the noninsulin cases or without raising the insulin dosage in the insulin cases. We have also been able to substitute more than an equal number of grams of carbohydrate for the fat omitted. Bloor,[6] working with partially depancreatized dogs, found a greater accumulation of fat in the blood plasma, and a slower removal of it than is normal, and states that his experiments indicate that these animals may not be able to utilize fat as well as the intact animals. Voegtlin[7] believes that insulin is not strictly related to carbohydrate metabolism but is also concerned with protein and fat metabolism. Allen[8] concludes that the insulin requirement of the organism is governed not only by carbohydrate but also by fat and all other elements entering into the diet metabolism. Joslin[9] has shown that obesity is a common early symptom of diabetes and occurs before sugar appears in the urine. This might be explained on the basis that the patient first loses the power to burn fat, and hence stores it.

Thus far, we have found no definite relation between insulin and the various types of food, but in the measuring of food tolerances and the adjustment of the insulin dosages to new diets, we have had excellent results by assuming that 1 unit of insulin will burn on the average of 2 grams of food. If a patient has no tolerance and is placed on a diet containing 200 gm. of carbohydrate, 100 gm. of protein and 100 gm. of fat, or 400 gm. of food, he will need 200 units of insulin daily. We have had a number of extremely severe diabetic patients to whom we have given doses nearly as high as this.

From the patients' standpoint, the most striking advantage gained by the use of these high carbohydrate diets has been the improvement in physical and mental activity. Such an improvement can be evidenced only by testimonials which are admittedly unreliable, but a few experiments with these diets will rapidly convince one of the truth of the observation. In the milder cases, such improvement was noted within a few weeks following the change in diet. In other patients who had been on the old diets for many years, the change occurred more gradually over a period as long as from three to four months. Two of our laboratory workers volunteered to eat a typical diabetic diet, balanced according to the Woodyatt formula, fat equals 2 carbohydrate plus ½ protein, and within a few days they began to complain of a diminution in their mental and physical powers. This was associated with acetone in the urine and considerable indigestion, doubtless due to the large amounts of fat. Following this experiment, it required some time to restore them to normal.

On these high carbohydrate diets, patients are entirely freed from the slightest traces of the acetone type of acidosis, whereas formerly, even when there was no acetone in the urine by the ordinary tests, its odor could be detected on the breath. Based on Shaffer's[10] earlier work, Woodyatt's belief was that a diet would cause no acidosis if the fat did not exceed two times the carbohydrate plus one half of the protein. Later, Shaffer[11] found that, although, in vitro, one molecule of glucose was effective for the oxidation of two molecules of fatty acid, under body conditions double that amount of glucose was necessary for complete avoidance of acetone body production. For many years, Joslin[12] has been advocating the use of more carbohydrate and less fat. His maintenance diets in an article in Oxford Medicine written in January, 1924, contain approximately 1 gram of carbohydrate to each gram of fat.

Gray[13] maintains that blood fat analyses are a material aid in the diagnosis and especially in the prognosis of diabetes mellitus. The higher the persistent blood fat, the more serious is the prognosis. It may be that the high fat diets of the past have been responsible for the high blood fats that he observed. We are now following the blood fat in severe cases to ascertain whether the new diets with ample insulin will bring about the desired decrease.

In the past, we have been unusually solicitous about keeping patients sugar-free and with a normal blood sugar, not only because of the deleterious effect of the sugar but also because this loss of sugar upsets the carbohydrate fat ratio. Infections, even when slight, reduce a patient's natural tolerance, causing a loss of the available sugar because it is passed in the urine. Even when the patient is sugar-free and while eating no food, serious infections have often precipitated coma, because of the imperfect consumption of body fat. Overexercise often causes a sufficient consumption of body fat to produce an acidosis, even when the diet is carefully balanced. These new diets, with at least two parts of carbohydrate to each part of fat, afford such a margin of safety that the acetone type of acidosis can hardly occur, even when large amounts of sugar are passed in the urine.

6. Bloor, W. R., and Gilette, Ethylnn M.: The Utilization of Fat in Diabetes, Proc. Soc. Exper. Biol. & Med. **22**: 251 (Jan.) 1925.
7. Voegtlin, C.; Dunn, E. R., and Thompson, J. W.: Antagonistic Action of Certain Sugars, Amino Acids and Alcohols on Insulin Intoxication, Am. J. Physiol. **71**: 574 (Feb.) 1925.
8. Allen, F. M.: Clinical Observations with Insulin, J. Metabol. Res. **3**: 61 (Jan.) 1921.
9. Joslin, E. P.: The Prevention of Diabetes Mellitus, J. A. M. A. **76**: 79 (Jan. 8) 1921.
10. Shaffer, P. A.: Further Observations on the Mechanism of the Ketolytic (Antiketogenic) Action of Glucose, J. Biol. Chem. **46**: vi (March) 1921.
11. Shaffer, P. A.: Harvey Lectures, 1922.
12. Joslin, E. P., in Oxford Medicine, New York, Oxford University Press **4**: 131, 1921.
13. Gray, H.: Lipoids in 1,000 Diabetic Bloods with Special Regard to Prognosis, Am. J. M. Sc. **168**: 34 (July) 1924.

We are also studying the type of blood vessel disease associated with high blood pressure, because this disease is such a common complication of diabetes. Kylin [14] found that in diabetic patients under 40 years of age, the blood pressure was usually normal, but that above this age high blood pressure seemed to be the rule. Koopman [15] concludes from a study of 161 cases of diabetes that in young patients the blood pressure is normal, and in older ones hypertension is the rule.

Nuzum, Osborne and Sansum [16] have shown that high blood pressure may be produced in animals by the feeding of high protein diets containing too large a proportion of the acid-ash foods. The microscopic sections from the tissues in this series, an account of which will be published soon, show all the blood vessel lesions associated with high blood pressure, from a slight thickening of the intima to marked calcification of the vessels. Two years ago we did hydrogen ion concentrations as a routine on all diabetic urines, and we not only found such urines exceedingly acid (p_H 5.2), but also were unable to balance such diets to produce a neutral urine. At first we advocated the use of alkaline-ash soy bean products, but at present by the use of potatoes, large servings of fruit and more milk with less meat, we have no difficulty in balancing these diets to produce a neutral urine. We expect that this will lessen the incidence of blood vessel disease.

These diets are more palatable and lessen the craving for forbidden foods, especially for the carbohydrates. Diabetic patients often indulge in carbohydrate "sprees," and it may be that in so doing they are obeying a metabolic law. Much has been written about the consumption of too much sugar, but it seems to us that there is an equal or more serious tendency at present toward the overconsumption of fat, for rich (fat) foods are in greater and greater demand.

Our patients now seem to be satisfied with maintenance diets of lower caloric content. This may be due to the possibility that higher carbohydrate diets are more efficient and also to the fact that none of the food is lost in the form of the acetone bodies.

Warren and Root [17] have shown that the islands of Langerhans can and do regenerate. They believe that the destruction may be due to the acidosis, which in turn is due to abnormal fat or protein metabolites. These diets with their entire freedom from acidosis should give the pancreas its best chance for recovery. Even at this early date, it will be seen that some of the patients have been able to lower their insulin dosages. These lowered dosages are significant in these cases because over a long period of time before the use of the present diet plan, no change in their insulin requirements had been observed.

Such high carbohydrate diets necessitate more insulin, and many patients who are now not taking it should be advised to do so. This increases the cost of their diabetic medication, the average increase in insulin dosages in the cases cited above being about 40 per cent., with a constant tendency, however, toward a lower dosage. But this increased cost is partly offset by the decreased cost of the new diet plan, since no special foods are used, and much less of the expensive fats, such as cream, butter and olive oil. Then, too, the cost of insulin has been constantly on the decrease, and there is every reason to believe that further radical reductions in its cost will be made. These diets also enable the patient to increase his earning capacity.

14. Kylin, E.: High Blood Pressure and Diabetes, Zentralbl. f. inn. Med. **42**: 873 (Nov. 12) 1921.
15. Koopman, J.: Blood Pressure and Sugar Metabolism, Endocrinology **8**: 340 (May) 1924.
16. Nuzum, F. R.; Osborne, Margaret; and Sansum, W. D.: The Experimental Production of Hypertension, Arch. Int. Med. **35**: 492 (April) 1925.
17. Warren, Shields; and Root, H. F.: The Pathology of Diabetes, with Special Reference to Pancreatic Regeneration, Am. J. Path. **1**: 415 (July) 1925.

SUMMARY

1. With the use of the high carbohydrate diets, we have found no difficulty in keeping patients sugar-free and with a normal blood sugar.
2. The patients are restored to a more nearly normal state of physical and mental activity.
3. They are freed from the slightest traces of the acetone type of acidosis.
4. The potatoes, milk and fruits have enabled us to eliminate the acid-ash type of acidosis which we believe has been a cause of the high incidence of blood vessel disease.
5. The diets are more palatable.
6. The patients lose their craving for forbidden foods, especially for the carbohydrates.
7. A somewhat lower caloric intake is apparently required for full maintenance.
8. These diets are cheaper, because they contain no special foods and much less of the expensive fats, such as cream, butter and olive oil.
9. Theoretically, at least, and because of the entire freedom from acidosis, such diets should afford the patients the best opportunity for partial recovery.

CHARACTERISTIC CHANGES IN BLOOD CHEMISTRY IN WHOOPING COUGH *

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Whooping cough still remains a source of a far from negligible mortality and of a great morbidity in childhood. A disease that causes 10,000 deaths in one year in the United States is certainly a serious menace. Yet this does not take into consideration the mortality indirectly attributable to it from predisposition to other infections, notably tuberculosis, nor does it take into account the morbidity resulting from it due to the persistent alterations induced so often in the bronchopulmonary tract; nor, indeed, can any calculation be made that would adequately express the detrimental effect on the nutritional status of the patient, a condition that probably persists often for a prolonged period of time.

In the study of pertussis there has not, it appears, been as much attention given to the chemical analysis of the composition of the blood as it would seem is merited by the importance of this aspect in the view of modern advances in medicine.

CHEMICAL ANALYSIS OF THE BLOOD IN PERTUSSIS

A total of 200 analyses were made by us, in some instances rather completely and in others for only one or two constituents. Certain changes were found with such a decided frequency as to be almost characteristic, and they apparently bear a direct relationship to the underlying pathologic basis of the disease. These

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changes were, particularly, (1) a change in the hydrogen ion concentration and (2) an alteration of the inorganic phosphorus content of the plasma.

Hydrogen Ion Concentration.—The p_H of the blood expressing the true reaction was determined on the plasma in eighty-nine examinations by the electrometric method using the micro vessel, as described by De Eds and Hanzlik,[1] and checked up often by the colorimetric method as used by Hastings and Sendroy.[2] The blood was either coated immediately with liquid petrolatum or taken under liquid petrolatum and stored in the ice-box until the determinations were carried out (on the same day or the following morning).

The alterations detected were quite definite and at times accentuated. The determination ranged in untreated cases on an average from 7.15 to 7.25, with such exceptionally low figures occasionally as 6.98 and 7.01. It seemed to us that, in general, a decided relation existed between the stage and severity of the disease and the hydrogen ion concentration of the blood, the latter being lowest in the more severe cases and in the full paroxysmal stage.

*Blood Chemistry Determinations in Pertussis Before Treatment.**

	Normal Values	Blood in Pertussis: No. of Determination	Minimum	Maximum	Average Value
Hydrogen ion concentration	7.35				
Electrometric	....	10	6.96	7.41	7.29
Colorimetric	....	8	7.15	7.35	7.25
Phosphorus, inorganic	4.5-7.0 mg.	20	1.0	3.6	2.0 mg.
Calcium	10.5-11.5 mg.	17	8.5	13.9	10.7 mg.
Carbon dioxid	53-77	20	38	66	50
Urea	12-45 mg.	25	18.0	37.0	27.0 mg.
Uric acid	2-3 mg.	29	1.2	4.7	3.1 mg.
Creatinin	1-2 mg.	27	0.9	1.3	1.1 mg.
Sugar	50-120 mg.	23	50	76	65 mg.

* The normal values given are taken from Hawk's Physiological Chemistry, except for the figures for phosphorus, which are those given by Howland and Kramer for children under 5 years.

Phosphorus Content of the Plasma.—The normal value for the phosphorus content of the plasma in children up to 5 years of age varies from 4.5 to 7.1 mg. per hundred cubic centimeters of blood, according to the observations of Howland and Kramer.[3]

A total of 138 determinations were made in pertussis by the Briggs modification of the Bell-Doisy method.[4] In the majority of these analyses, the values were under 3 mg. per hundred cubic centimeters, and in quite a few there was less than 2 mg. per hundred cubic centimeters, the average being 2.0 mg. In one instance the very low figure of 1.0 was encountered. The significance of this finding as an indication of a change in phosphorus metabolism is evident.

Calcium Content of the Plasma.—The calcium content of the plasma was determined in forty-six specimens of blood by the method of Clark.[5] Slight variations from the normal figure of 10 to 11 mg. per hundred cubic centimeters were noted in some cases, but the majority of the analyses were entirely within normal range, the average in seventeen cases before treatment being 10.7 mg. per hundred cubic centimeters.

Carbon Dioxid Content of the Plasma.—The values that were obtained from fifty-seven examinations by the method of Van Slyke showed the majority of the results to fall within the lower half of the normal range. In some instances, however, a lower figure was encountered. In twenty determinations before treatment, the average value was 50 per cent. by volume.

Routine Analysis.—The values for urea, uric acid, creatinin and sugar will be found in the table.

SUMMARY

A total of 200 analyses of the blood have been made in whooping cough. Distinct and apparently significant changes have been encountered, the most characteristic of which were (1) a lowering of the hydrogen ion concentration of the blood and (2) a diminution of the inorganic phosphorus content.

CONCLUSION

There is a change in the hydrogen ion concentration of the blood in pertussis associated with a lowering of the inorganic phosphorus content of the plasma.

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1. De Eds, F., and Hanzlik, P. J.: A Simple Micro Vessel with Electrode for Estimating the Hydrogen Ion Concentration of Blood, J. Biol. Chem. **60**: 355 (June) 1924.
2. Hastings, A. B., and Sendroy, J.: The Colorimetric Determination of Blood p_H at Body Temperature Without Buffer Standards, J. Biol. Chem. **61**: 695 (Oct.) 1924.
3. Howland, John; and Kramer, Benjamin: Calcium and Phosphorus in the Serum in Relation to Rickets, Am. J. Dis. Child. **22**: 106 (Aug.) 1921.
4. Briggs, A. P.: A Modification of the Bell-Doisy Phosphate Method, J. Biol. Chem. **53**: 136 (July) 1922.
5. Clark, G. W.: The Micro Determination of Calcium in Whole Blood, Plasma and Serum by Direct Precipitation, J. Biol. Chem. **49**: 487 (Dec.) 1921.

RELIEF OF HAY-FEVER BY INTRADERMAL INJECTIONS OF POLLEN EXTRACT

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Intradermal medication is neither new nor recent. Tuberculin and vaccines have been so exhibited. Mention is occasionally found of the fact that hay-fever patients have been benefited by intradermal pollen tests. Vaughan [1] has advocated the daily subcutaneous injection of small doses of pollen extract in the treatment of hay-fever during the attack. But I cannot find in the literature here available a report of the systematic use of intradermal injections of pollen extract, at one or two day intervals, for the relief of the symptoms of hay-fever.

My purpose here is to report the results in a small series of cases intradermally treated, and the technic employed. These results are so much better than those obtained in previous years on a larger number of patients of the same sort, living in the same community and treated in the usual way with entirely similar pollen extracts, that it seems proper to offer the method for wider trial.

Acquaintance with the therapeutic properties of the skin test was forced on me in 1921, when I could neither buy an extract of Bermuda grass pollen nor collect enough of such pollen to make one. In April of that year, my first local hay-fever patient, as later reported,[2] "reacted strongly to the whole pollen of Bermuda grass and was relieved noticeably by the skin test. This continued to be his treatment until a good Bermuda extract was finally obtained in May. One to 12,000 was given in ascending doses until June 30, though he was symptom-free." This therapy was

1. Vaughan, W. T.: Specific Treatment of Hay-Fever During the Attack, J. A. M. A. **80**: 245 (Jan. 27) 1923.
2. Phillips, E. W.: The Treatment of Hay-Fever with Arizona Pollens, Southwest. Med. **6**: 136-144 (April) 1922.

accomplished with raw pollen used in superficial skin incisions, which were progressively increased in length. Shortly thereafter, an intradermal test with the newly made extract (not standardized) was done on a patient suffering from hay-fever. The resultant local reaction reached from the wrist to the deltoid insertion, and it lasted forty-eight hours; when it subsided, the patient's symptoms had disappeared, not to return that year. Treatment was continued at weekly intervals, but not intradermally.

In 1922, among eighty-nine patients who were treated for hay-fever, there were two of the type especially liable to pollen shock: overnourished women with thin skins, very firm flesh, and a high degree of sensitization. It is practically impossible in giving subcutaneous treatment to a person of this type to be sure that part of the injection does not find its way into a small vein, for the superficial vessels are so firmly held that they cannot slip away from the needle. Both of these women suffered really severe pollen shocks. To avoid a repetition of this accident, it was decided to treat both by giving the dose into the substance of the skin. One patient was treated preseasonally, the other coseasonally. Both obtained practically complete relief that year and during the three succeeding years, and neither has had pollen shock since the intradermal technic was adopted.

The method thereafter was employed occasionally, especially if shock was feared. It is awkward to use in preseasonal treatment, because of the quantity of fluid injected. The larger doses leave indurated nodules which persist for a week or two. With the smaller dosage employed in treatment during the attack, this disadvantage is not present. In 1924, I began to use the intradermal method systematically on about half of the patients treated coseasonally, giving the treatments two or three times a week; in 1925, I used it on all such who were being treated with a single pollen. The later patients of this season were injected daily.

The material here reviewed comprises twenty-nine patients, of whom twenty-four were having symptoms from Bermuda grass pollen, three from ash, one from bur ragweed and one from careless weed. The pollen extracts were made from local pollens by a modification of Clock's method, and Coca's fluid was used as a diluent. They were the same that had been used in the subcutaneous treatment, and except for the advantage inherent in the use of local pollen, they were not different from other good extracts similarly prepared. It may be remarked at this point that the effective strength of an extract is best measured clinically. It depends on the quality and the purity of the pollen used and on the method of its extraction. The term "pollen unit" conveys no information unless the antecedents of the preparation are completely known. The relative potency of the extracts now under consideration may be judged by the fact that an ordinary preseasonal (preventive) course begins with 0.05 c.c. of the 1:5,000 dilution and ends with 1 c.c. of the 1:500 dilution. This is enough to protect the average patient, and many never tolerate so much and still are protected.

TECHNIC

The technic of intradermal treatment during the attack was as follows:

The sensitization was determined by the "scratch test," but a tiny incision was used, not a scratch. Then, by the same method, the patient was tested with the 1:500, the 1:5,000, and (if the latter was strongly positive) with the 1:10,000 dilution of the indicated pollen. Usually the 1:5,000 gave a weak positive reaction, and the initial dose of 0.05 c.c. of the 1:5,000 dilution was given into the substance of the skin, the same as an intradermal test. The patient was instructed to note carefully the size of the resulting local reaction, comparing it to the palm of his hand. In the earlier cases, only three doses a week were given; in the later ones, treatment was given daily except Sunday. The patients were instructed to return on the next day (or the next treatment day), if the reaction had begun to recede by that time.

The increase in dosage was adjusted to the tolerance of the individual patient, the attempt being to produce a local reaction about the size of the patient's palm, which reaction should begin to subside within twenty-four hours. With some patients the dose could be doubled at each treatment; others tolerated only a 50 per cent. increase, and occasionally a dose had to be repeated without increment. Care was taken to select a fresh site for each injection, in order to avoid desensitized areas and to insure a brisk local response to each dose.

When relief was obtained, the dose interval was doubled, and the progressive increase of dosage was continued. Then, after three or four doses, the patient was directed to return at the first sign of hay-fever, and at ten-day intervals even if no symptoms had recurred. Some disregarded this last direction with no ill effect.

Intradermal injections are painful if more than 0.25 c.c. is introduced into one wheal. Accordingly, it was found necessary to add dilutions of 1:2,500 and 1:250 to the armamentarium.

RESULTS

Treatment of these twenty-nine patients by the intradermal method was monotonously successful. Complete relief, or so near an approximation to it that the patients were comfortable and satisfied, occurred in every case. And it occurred early; six patients were made comfortable by the first dose. Those who were treated daily (ten patients) reported themselves as relieved, on the average, at the end of about two and one-half days, with an average of the same number of doses. The longest refractory period was seven days with six doses. Those who came three times a week (nineteen patients) were made comfortable, on the average, in six days after two and sixteen-nineteenths doses. The most refractory took twelve days with five doses. As stated above, treatment was continued at increasing intervals and with ascending dosage for some time after relief was obtained.

Four other patients began treatment by the same method and abandoned it. One had had four doses, the others one or two each. None have since been heard from. Indirectly, it has been learned that one obtained relief. Assuming that the others were failures, even then the result of treatment during the attack by the intradermal method is much better than I have been able to effect by the usual method, other conditions being the same.

Dr. W. W. Duke of Kansas City very kindly consented to try the intradermal method in his practice. As stated in personal communications, he has modified the technic slightly and apparently to advantage; for his results are even better than the ones here recorded.

COMMENT AND CONCLUSIONS

So far, at any rate, as these few cases are concerned, it appears that a treatment consisting essentially of frequent intradermal tests of increasing strength promptly and effectively relieved the symptoms of hay-fever.

It was observed that relief was proportionate, not to the quantity of pollen extract administered, but rather to the extent and vigor of the local reaction. This may offer a hint concerning the mechanism of the biochemical process involved, but speculations of this sort are not in order here.

Daily injections are safe, always provided that the reaction from the preceding dose has begun to subside and that the ratio of increase is well judged. Relief was had much more quickly with a daily dosage, though the number of doses before relief was practically the same whether treatment was administered daily or thrice a week.

The intradermal method is recommended for trial by those who are experienced in hay-fever work. While it is simple, a certain nicety of technic, a practiced judgment of reactions, and, above all, a thorough familiarity with the particular reagent which one is using, are essential if good results are to be obtained. The physician who deals with allergic disease only occasionally will be wise in adhering to the accepted mode of treatment.

St. Luke's Home.

THE USE OF TRYPARSAMIDE IN PATIENTS WITH AND WITHOUT OCULAR LESIONS*

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Since the introduction of tryparsamide as a therapeutic agent in human trypanosomiasis by Pearce,[1] numerous articles have been published on its advantages and untoward effects in treating neurosyphilis. Practically every writer has mentioned certain adverse manifestations on the visual apparatus, varying from mild subjective symptoms to blindness.

The experimental study by Young and Loevenhart [2] on the toxicity of various arsenical drugs with reference to the visual apparatus explains the cause for bad results in the use of tryparsamide as well as atoxyl from which it is derived. They showed that arsenicals with an amino group, or a substituted amino group, in a para position to the arsenic produce optic nerve lesions in the rabbit. Organic arsenicals with the amino group, or substituted amino group, in the ortho or meta position to the arsenic produce no optic nerve lesions. Obviously, the valence of the arsenic in this group is not important in the production of optic nerve lesions. The valence of the arsenic in certain instances, however, can modify the intensity of the action of a given substance on the optic tract. The most important factor in the production of optic nerve lesions is the presence of the amino group in the compound in the para position to the arsenic regardless of its valence.

Lorenz, Loevenhart, Bleckwenn and Hodges [3] made the first clinical report of the use of tryparsamide in the treatment of neurosyphilis. Only two articles concerned primarily with the optic tract have appeared since. Lorenz and his associates began with 5 gm. dosage at weekly intervals, but 40 per cent. of their patients complained of visual disturbances, and the dosage was reduced to 3 gm. Two of their patients had optic nerve lesions before treatment, and their disability was increased and remained permanent. Only 7 per cent. of the total number of patients treated,[4] however, showed visual disturbances, and these usually in the first course of treatment. Treatment could usually be resumed after a few weeks of rest without any further difficulty.

The first article based on a careful study of the visual manifestations in 241 patients was published by Woods and Moore.[5] In 10.2 per cent. of the patients, there were subjective disturbances and in 5.5 per cent. objective ocular damage. Five patients, or 2.1 per cent., had disturbances, but the influence of tryparsamide was questionable. The untoward effects usually appeared by the fifth injection. Those having subjective symptoms could usually be treated even more vigorously after the symptoms had subsided. Size of dosage apparently had little to do with the incidence of disturbances, unless possibly the smaller dosages were more prone to produce untoward effects. The optical disturbances were more frequent in paretic and tabetic patients than in other types of neurosyphilis. They also occur in untreated patients, but not to such a great extent. While Woods and Moore do not think that preexisting syphilitic disease of the optic nerve or retina is necessarily a contraindication to the use of tryparsamide, they do believe that, once objective evidence is present and attributable to tryparsamide, the drug should be permanently withheld. That tryparsamide will cause visual disturbances in conditions other than neurosyphilis was demonstrated in two cases of postencephalitic parkinsonian syndrome and in a nonsyphilitic boy with lymphosarcoma. This was also demonstrated in Pearce's [1] cases of trypanosomiasis. However, if objective signs occur, withdrawal of tryparsamide will usually stop the process well short of severe permanent injury.

The other article, by Lillie,[6] points out that the effect of syphilis on the optic tract is usually ignored in evaluating the untoward effects of tryparsamide. The literature on the subject indicates that from 11 to 41 per cent. of untreated neurosyphilitic patients have visual disturbances. In his own series, 50 per cent. had disturbances in the vision, pupils, reflexes, fundi and perimetric fields. In patients treated with arsenicals other than tryparsamide, 12 per cent. had visual disturbances, 9 per cent. fundus changes, and 20 per cent. perimetric changes. Of those treated with tryparsamide, 7.8 per cent. had subjective symptoms, and 3.5 per cent. had objective signs. None of these developed central scotomas, in contrast to 2 per cent. occurring in arsphenamin treated patients and 6 per cent. in untreated patients. In other words, treatment with the arsphenamin group of drugs caused

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1. Pearce, L.: Studies on the Treatment of Human Trypanosomiasis with Tryparsamide, J. Exper. Med. (supplement) **34**: 1 (Dec.) 1921.

2. Young, A. G., and Loevenhart, A. S.: The Relation of the Chemical Constitution of Certain Arsenical Compounds to Their Action on the Optic Tract, J. Pharmacol. & Exper. Therap. **23**: 107 (March) 1924.

3. Lorenz, W. F.; Loevenhart, A. S.; Bleckwenn, W. J., and Hodges, F. J.: Therapeutic Use of Tryparsamide in Neurosyphilis, J. A. M. A. **80**: 1497 (May 26) 1923.

4. Lorenz, W. F.; Loevenhart, A. S.; Reitz, R. F., and Eck, C. P.: The Use of Tryparsamide in Neurosyphilis, Am. J. M. Sc. **168**: 157 (Aug.) 1924.

5. Woods, A. C., and Moore, J. E.: Visual Disturbances Produced by Tryparsamide, J. A. M. A. **82**: 2105 (June 28) 1924.

6. Lillie, W. I.: Tryparsamide Treatment of Syphilis of the Nervous System, J. A. M. A. **83**: 809 (Sept. 13) 1924.

some abatement in the progress of the disease, but tryparsamide is even more effectual than the arsphenamin group.

Other reports of a general nature on the use of tryparsamide constantly contain references to ocular disturbances. Ebaugh and Dickson[7] had bad optical results in about 2 per cent. of their patients, but on the whole were favorably impressed by the clinical use of tryparsamide. Bleumel and Greig[8] consider tryparsamide as "therapeutic dynamite" and are not pleased with its general clinical results. This may possibly be due to the long courses of treatment employed. It should be noted that they gave weekly doses of tryparsamide for sixteen weeks. In view of our early experience we believe this is too intensive, not only for the optic tract, but also for the nervous system in general. In Crawford's[9] small series of paretic patients, 13.3 per cent. showed signs of developing optic atrophy. None of these patients complained of visual disturbances. Parsons'[10] small series of patients treated with sulpharsphenamin had a somewhat higher incidence of visual disturbances than the tryparsamide series. Twenty-five per cent. (three patients) of the tryparsamide group had visual field constrictions without subjective symptoms. Wile and Wieder[11] did not observe any serious permanent injury to the vision in their cases. Ten per cent. of Smith's[12] patients had visual disturbances; in 5 per cent., the result was about half normal vision and 5 per cent. became completely blind, in a series of forty patients.

One thing is notable about these reports. The larger the series, the less likelihood of a high incidence of bad ocular results. The higher rate of incidence usually occurred earlier in the series than later. In the smaller series, all the patients seem to have had moderately high if not high incidences of ocular mishaps. There seems to be little else to which to ascribe these rather alarmingly high figures than to the necessary inexperience of persons using a new drug. As with Lorenz, Loevenhart, Bleckwenn and Hodges,[3] the early part of our own series[13] had a higher incidence of untoward results than the later portion of the series.

This study was undertaken to test out the following considerations:

1. Will tryparsamide cause so large a percentage of optic complications as to warrant its discontinuance?
   (*a*) In patients already suffering from optic neuritis or optic atrophy.
   (*b*) In patients with normal optic tracts.
2. Is tryparsamide more liable to affect adversely those patients having the optic tract already attacked by syphilis?
3. What are the most important signs and symptoms of adverse action on the optic tract?

For the purpose of arriving at an answer to the foregoing questions, a detailed study was made of all neurosyphilis patients treated with tryparsamide in the neurologic services of the Barnes Hospital and the Washington University outpatient department up to June, 1925. Two tables are presented, showing a summary of such cases. The first contains those cases called normal; i. e., patients having no recognizable signs of optic neuritis or atrophy, loss of visual acuity, or contraction of visual fields. The second table concerns the patients classified as abnormal because of the presence of one or more of the foregoing signs of optic involvement. The total number of patients studied was 180. Of these, 153 were considered normal in the foregoing sense and twenty-seven abnormal.

TABLE 1.—*Manifestations in Normal Patients*

	Patients	
	Number	Per Cent.
Eye complications in normal patients	8	5.2
Blurred vision sufficient to omit treatment temporarily	4	2.6
Moderate visual field constriction	3	1.9
Marked visual field constriction	5	3.2
Improved when treatment was withdrawn	3	1.9
Unimproved when treatment was withdrawn	2	1.3

Of the 153 normal patients only eight, or 5.2 per cent., had sufficient manifestations to warrant their being tabulated here. Among this eight, three had only a slight contraction of the visual fields which disappeared after temporary withdrawal of the treatment, and five had marked constriction, of which two failed to improve. Thus, we see 1.3 per cent. of the normal patients apparently injured by the use of tryparsamide.

TABLE 2.—*Manifestations in Abnormal Patients*

		Worse		Unimproved		Unchanged	
	No.	No.	Per Cent.	No.	Per Cent.	No.	Per Cent.
Abnormal patients treated	27	10	37.0	4	14.8	13	48.1
Optic atrophy*	16	4	27.4	2	12.5	8	50.0
Slightly or moderately constricted fields	10	4	40.0	2	20.0	4	40.0
No atrophy; chorioretinitis	1	0	0	0	0	1	100.0

* Three patients became blind; one improved; one's progress hastened by treatment; the other neither hastened nor retarded.

Of the twenty-seven abnormal patients ten, or 37 per cent., became definitely worse; six of the ten patients had recognizable atrophy at the start, while four had slightly or moderately constricted fields. Four of the twenty-seven were notably improved (14.8 per cent.), and thirteen (48.2 per cent.) remained the same. Three of the six optic atrophy patients who became worse progressed to blindness. One of these recovered a portion of his vision; one seemed to lose sight more quickly from the use of the drug, and the other continued on his downward course, seemingly neither hastened nor retarded by tryparsamide.

The patients that suffered permanent injury were treated during the first six months of our use of tryparsamide. After sufficient experience in noting symptoms and in regulation of the dosage to be used in any particular patient, no such ill effects resulted. Treatment was given in a routine manner during this time[13] and consisted of tryparsamide in approximately 50 mg. per kilogram of body weight doses once weekly and mercuric salicylate in 0.06 gm. doses, three or four days after the tryparsamide injections, for a period of eight weeks when a rest period of from four to six weeks was allowed. If visual disturbances were recognized, treatment with tryparsamide was suspended as long as seemed necessary and then resumed with the same or smaller doses. Later arsphenamin, neo-

7. Ebaugh, F. G., and Dickson, R. W.: Use of Tryparsamide in the Treatment of General Paresis, J. A. M. A. **83**: 803 (Sept. 13) 1925.
8. Bleumel, C. S., and Greig, W. M.: The Results Obtained with Tryparsamide in a Group of Fifty Cases of Neurosyphilis, Colorado Med. **22**: 16 (Jan.) 1925.
9. Crawford, C. M.: Tryparsamide Therapy in Neurosyphilis, Canad. M. J. **15**: 47 (Jan.) 1925.
10. Parsons, R. P.: Tryparsamide and Sulpharsphenamin in the Treatment of Neurosyphilis, U. S. Nav. M. Bull. **22**: 526 (May) 1925.
11. Wile, U. J., and Wieder, L. M.: Tryparsamide in the Treatment of Neurosyphilis, J. A. M. A. **84**: 1710 (June 6) 1925.
12. Smith, E. R.: Tryparsamide in Neurosyphilis, J. Indiana M. A. **18**: 125 (April) 1925.
13. Schwab, S. I., and Cady, L. D.: Tryparsamide in Syphilis of the Nervous System, Arch. Neurol. & Psychiat. **13**: 80 (Jan.) 1925.

arsphenamin and sulpharsphenamin, other mercurials and bismuth were used, and either the dosage of tryparsamide was reduced or the intervals between injections was lengthened, all to suit the tolerance of the patient generally or to suit his especial needs. Tryparsamide was used as an adjuvant to known spirocheticidal agents and in rather strict adherence to the findings of Brown and Pearce,[14] who say that it is not essentially spirocheticidal, but that it exerts a favorable stimulative effect on the animal organism of the patient with neurosyphilis. Due cognizance was taken of a possible cumulative effect of repeated doses.[15] Traces of arsenic may be found in the urine as long as three weeks after a single injection of tryparsamide.

Including the early patients that suffered injury, the percentage of normal patients that had permanent visual impairment is so low that it falls far short of being a serious contraindication to tryparsamide as another weapon against syphilis. This is especially true when it is noted that none of the normal group in which treatment was begun in the latter part of the series suffered noteworthy damage.

The consideration of those already showing ocular involvement who were objectively damaged is a serious one. Thirty-seven per cent. of this series became worse. At first glance, such a high figure would indicate that the therapeutic agent itself had caused the injury. Moreover, a consideration of the number showing any marked improvement as a result of the treatment does not add much in favor of the drug. When only 14 per cent. show improvement as against 37 per cent. worse, and 48 per cent. no better, appearances are adverse on the basis of this evidence. One finds justification, however, for it as an agent in the treatment of syphilitic ocular lesions when one considers the generally unfavorable results of such cases in which treatment by other means was given. The fact that 62 per cent. of these lesions, with so dismal a prognosis, are either arrested or improved when the treatment is properly controlled lends a more favorable aspect to its use.

CONCLUSIONS

1. Tryparsamide can be used by experienced persons with comparative safety on patients having normal optic tracts. Reasonable safety in the use of the drug for all patients requires an experience analogous to that required in special surgical procedures.

2. Patients with optic involvement, such as contracted fields or abnormal fundi, are more liable to injury by the treatment than normal patients, but show favorable response to treatment if it is properly controlled.

3. The most important signs of adverse action of the drug on the optic tract are subjective dimness of vision, flickering or shimmering sensations, or flashes of light; also objective diminution in the visual acuity, contraction of the visual fields and changes in the fundi.

4. The occurrence of subjective symptoms should be thoroughly investigated for an objective basis. If no objective signs are found, tryparsamide may be continued with caution. The presence of objective findings is a contraindication for further tryparsamide for at least one month, when it may usually be resumed.

600 South Kingshighway.

14. Brown, W. H., and Pearce, Louise: Tryparsamide: Its Actions and Uses, J. A. M. A. **82**: 5 (Jan. 5) 1924.
15. Young, A. G., and Muehlberger, C. W.: The Excretion of Tryparsamide, J. Pharmacol. & Exper. Therap. **23**: 461 (July) 1924.

CHANGES IN THE BLOOD RESULTING FROM DUODENAL FISTULA

A CLINICAL AND EXPERIMENTAL STUDY *

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Attention has recently been directed to duodenal fistulas by Colp,[1] Cameron [2] and Rigby,[3] who have compiled and carefully summarized data on reported cases. However, no definite explanation of the cause of death in such cases has been given. Believing that the chemical changes in the blood accompanying clinical and experimental duodenal fistula might afford information of value, we made a study of these at the Mayo Clinic. Two patients with acute postoperative duodenal fistula, one following gastric resection for carcinoma with a posterior Polya type of anastomosis, the other resulting from the removal of an abdominal sponge, were studied, as well as some sixty dogs in which fistulas had been produced experimentally. The chemical changes in the blood associated with both clinical and experimental acute duodenal fistula are similar to those reported by Haden and Orr,[4] Brown, Eusterman, Hartman and Rowntree,[5] and McVicar [6] in cases of high intestinal stasis. The changes consist of increasing alkalosis, decreasing concentration of chlorids in the blood serum, and progressive rise of blood urea, as shown in the accompanying table and chart. The response to intravenous injections of chlorids, glucose and water is similar to that in cases of high intestinal stasis.[7]

The life of animals with experimentally produced duodenal fistula can be maintained by introducing into the blood stream enough sodium chlorid to restore the blood chlorids to normal, provided a sufficient amount of fluid is also injected. Both sodium chlorid and a sufficient volume of water are necessary, for one without the other seems to have little effect in lengthening the life of the animal. Intravenous injection, twice daily, of from 500 to 700 c.c. of a 1 per cent. solution of sodium chlorid will maintain life in dogs with duodenal fistula for more than three weeks, at the end of which time the animals are in fair condition, whereas without such injection death occurs within three or four days. In either event, an increasing alkalosis, and a progressive decrease in blood chlorids seem to develop, and in the terminal stage there is an accumulation of urea in the blood and a progressive decrease in the volume of urine and its constituents, urea and chlorid. Only a summary of the results of our investigations will be given here.

* From the Division of Surgery, Mayo Clinic, and the Division of Experimental Surgery and Pathology, the Mayo Foundation.
1. Colp, Ralph: External Duodenal Fistulae, Ann. Surg. **78**: 725-744 (Dec.) 1923.
2. Cameron, A. L.: Treatment of Duodenal Fistula, Surg., Gynec. & Obst. **37**: 599-606 (Nov.) 1923.
3. Rigby, H. M.: A Note on External Duodenal Fistula with a Record of Some Unpublished Cases, Brit. J. Surg. **12**: 43-51 (July) 1924.
4. Haden, R. L., and Orr, T. G.: The Cause of Certain Acute Symptoms Following Gastro-Enterostomy, Bull. Johns Hopkins Hosp. **34**: 26-30 (Jan.) 1923.
5. Brown, G. E.; Eusterman, G. B.; Hartman, H. R., and Rowntree, L. G.: Toxic Nephritis in Pyloric and Duodenal Obstruction: Renal Insufficiency Complicating Gastric Tetany, Arch. Int. Med. **32**: 425-455 (Sept.) 1923.
6. McVicar, C. S.: A Discussion of the Clinical and Laboratory Findings in Certain Cases of Obstruction in the Upper Gastro-Intestinal Tract: The Rôle of Blood Chemistry in Diagnosis, Prognosis and Treatment of This Condition, Am. J. M. Sc. **169**: 224-235 (Feb.) 1925; The Treatment of Toxemia Associated with Gastric Stasis, Obstructive and Nonobstructive, Minnesota Med. **8**: 429-433 (July) 1925.
7. Haden and Orr (Footnote 4). McVicar (Footnote 6).

CAUSES OF DEATH IN CASES OF DUODENAL FISTULA

Explanations of the cause of death in cases of duodenal fistula have all been of a speculative nature. From the clinical standpoint, Kanavel's [8] description of a patient who died from retroperitoneal rupture of the duodenum is interesting. He says: "The appearance of the patient was almost suggestive of delirium tremens or more of an active toxemia. There were no positive signs of peritonitis, no vomiting, and the bowels moved freely. The patient presented the appearance of death from toxemia of other than bacterial origin." Kanavel also discusses the possible relation between death and the loss of bile and pancreatic fluid in cases of duodenal fistula and the bearing of toxic absorption from the decomposing mucous membrane of the stomach and duodenum, similar to that reported by Wilms [9] with high intestinal obstruction. The effect of the loss of pancreatic ferments and bile, as well as the absorption of various abnormal secretory products leaving the duodenum, is mentioned by Colp. It is noteworthy that in many of the reported cases of duodenal fistula the total amount of secretion discharged through the fistulous tract varied from 1 to 5 liters in twenty-four hours, and yet Colp believes that the loss of fluids alone cannot account for the rapid emaciation and debility in cases of duodenal fistula, for he found that they continued even when abundant fluids were supplied subcutaneously, intravenously or by rectal injection.

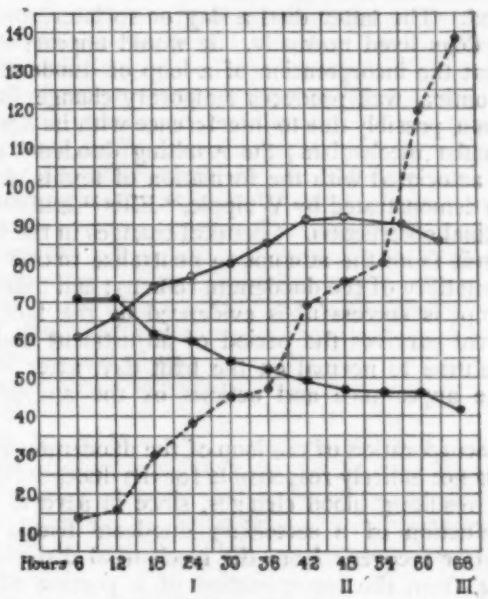
Findings in Experimental Duodenal Fistula

	Blood			
Date, 1924	Plasma Chlorid, Mg. for Each 100 C.c.	Carbon Dioxid, Percentage by Volume	Urea Nitrogen, Mg. for Each 100 C.c.	Creatinin, Mg. for Each 100 C.c.
12/2	663	53.5	8.9	1.11
12/2	667	61.8	11.0	1.11
12/3	574	69.0	25.0	1.29
12/3	544	72.9	33.0	1.39
12/3	495	75.8	40.0	1.54
12/3	478	80.7	52.0	1.43
12/4	445	87.5	74.0	1.53
12/4	429	87.5	80.0	1.73
12/4	429	85.5	95.0	1.95
12/4	427	71.0	134.0	3.51
	376	....	152.0	5.30

	Urine					
Date, 1924	Volume, C.c.	Total Nitrogen, Mg.	Urea and Ammonia Nitrogen, Mg.	Ammonia Nitrogen, Mg.	Chlorid, Mg.	Urea Nitrogen, Mg.
12/3	70	2,156	1909.0	23.8	14	1845.2
12/4	20	190	73.0	49.6	3	23.4
	Fluid from Duodenal Fistula					
12/2	1,200	.....	139.2	51.6	2,652	87.6
12/4	1,200	.....	837.9	459.9	1,900	388.0
12/4	900	.....	733.5	327.88	810	405.7

LOSS OF FLUID

Intravenous injections of adequate amounts of chlorids in a concentrated solution, although they raise the blood chlorids to normal, have practically no effect on the length of life of animals with duodenal fistula. The blood urea continues to rise, alkalosis progresses, and the dogs live no longer than those without intravenous injections of the concentrated solution of chlorid. On the other hand, when from 500 to 700 c.c. of water is added to this solution, thus rendering it isotonic, and given twice daily, the blood urea remains practically normal and life may be maintained for three weeks or longer. It must be remembered that the administration of hypertonic solutions introduces factors that may be inimical to the action of the salt. A 5 per cent. glucose solution in 200 c.c. of water, without chlorid, injected intravenously four times daily, has no effect on the blood chlorids, but, by its diuretic influence, facilitates excretion of the accumulated nonprotein nitrogen in the blood. However, death occurs in practically the same manner after injections of glucose without chlorid, except that the blood chlorids reach a minimal concentration in the blood stream. When a 2 per cent. solution of sodium sulphate is injected intravenously, the same chemical changes occur in the blood as after the intravenous injection of the glucose solution. Sodium, therefore, apparently has no specific effect. It would seem that loss of fluid through the fistula in cases of duodenal fistula contributes to the toxemia, but this loss can be compensated for by intravenous injections of appropriate solutions, which, by their diuretic effect, assist in the elimination of toxins and retained blood nitrogen. Disturbance of fluid balance is apparent, and restoration of the balance essential.



Blood chemical findings in duodenal fistula: solid line with solid dots, chlorids; solid line with hollow dots, carbon dioxid; broken line, urea.

DUODENAL STASIS COINCIDENT TO ACUTE DUODENAL FISTULA

The striking similarity of the chemical changes in the blood which accompany experimental duodenal fistula to those described by others in cases of upper intestinal stasis has led us to investigate further the possible causal relation between intestinal stasis and fistula. In our experimental production of acute duodenal fistula, a short loop of duodenum, approximately 5 cm. in length, was incorporated in the abdominal wound by suturing the peritoneum and fascia for about 1 cm. in length beneath the loop in order to maintain it in position. A small opening was then made to the lumen of the duodenum, the edges of which were sutured to the edges of the upper portion of the skin incision.

In the control animals, the same procedure was followed, except that the duodenum was not opened and

8. Kanavel, A. B.: Duodenal Toxemia Following Rupture of the Duodenum, with Remarks on Extraperitoneal Rupture and a Report of Two Cases, J. A. M. A. **62**: 759-761 (March 7) 1914.
9. Wilms, quoted by Kanavel (Footnote 8).

the skin incision was closed over the loop. Such controls were deemed advisable in order to determine the effect of the incorporation of a loop of duodenum in the wound.

The chemical changes in the blood during the first four days in the control dogs in which a fistula had not been produced ran parallel to those in which the fistula had been produced. On the fifth day, the blood of the control animals returned to normal, whereas changes in the blood of the dogs with the fistula continued as described. The latter died a day or so later, and the control dogs lived normally. It would appear, therefore, that the incorporation of a loop of duodenum in the abdominal wall produces temporary changes in the duodenum, possibly due to interference with its nervous or muscular mechanism; the resulting duodenal stasis may be associated with the formation of toxins similar to those demonstrated by Whipple,[10] Ellis [11] and others, in intestinal obstruction. Chemical changes in the blood may result from the attempt to neutralize toxins until normal motility of the duodenum returns; and that such an attempt is successful is evidenced by the fact that the animal survives the period of adjustment and the blood returns to normal on the fifth day, after which time the appearance and actions of the animal are normal.

The incorporation of the loop of the duodenum in the wound is not entirely responsible for the duodenal stasis and the resulting blood changes, since in several dogs the production of a secondary duodenal fistula two weeks after recovery from the mechanical disturbance resulting from the incorporation of a portion of the duodenum was followed by chemical changes in the blood similar in all respects to those following primary acute duodenal fistula.

Necropsy of the dogs with primary acute duodenal fistula and secondary acute duodenal fistula showed in both groups a dilatation of the upper intestinal tract, confined entirely to the duodenum, and varying from two to three times normal. Such findings lead us to believe that toxicity resulting from experimental acute duodenal fistula may depend not only on the loss of gastric and duodenal secretion, but also on duodenal stasis resulting from interruption of the continuity of the duodenum and its attachment to the fistulous tract.

LOSS OF BILE AND PANCREATIC SECRETION

The duodenal fluids, discharged through the duodenal fistula, are made up, among other things, of bile, pancreatic secretion and secretion by the duodenal mucous membrane and the stomach. Kanavel and Colp both believed it was possible that the loss of bile and pancreatic secretion might play a part in the production of the alkalosis and toxemia. In two dogs, we transplanted the common bile duct and both pancreatic ducts into the jejunum, approximately 25 cm. below its origin, and consequently neither the bile nor the pancreatic secretion was lost through the duodenal fistula. The chemical changes in the blood were exactly the same as those following duodenal fistula without transplantation of ducts. There was no evidence of a return to normal at any time, so that the condition was analogous to duodenal fistula rather than to simple distortion of the duodenum.

10. Whipple, G. H.: Intoxication of Intestinal Obstruction, in Contributions to Medical and Biological Research, dedicated to Sir William Osler, New York, P. B. Hoeber, 1919, pp. 1065-1073.
11. Ellis, J. W.: The Cause of Death in High Intestinal Obstruction, Ann. Surg. **80**: 429-448 (April) 1922.

DYSFUNCTION OF THE KIDNEY ASSOCIATED WITH DUODENAL FISTULA

Dysfunction of the kidney with high intestinal stasis was first pointed out by Tucker [12] in his study of postoperative vomiting in certain cases of gastro-enterostomy, and later by Brown, Eusterman, Hartman and Rowntree in their study of postoperative tetany. Most of these patients had albumin and casts in the urine. Dixon [13] found that the intravenous injection of sodium chlorid to replace that lacking in these cases of high intestinal stasis caused the disappearance of albumin and casts from the urine. These reappeared when, injections of sodium chlorid solution having been discontinued, the blood chlorids decreased. In cases of duodenal fistula with high nitrogen content of the blood, there is a progressive decrease in the amount of urea excreted in the urine and an increase in the amount of urea in the duodenal fluid.

LOSS OF GASTRIC SECRETIONS

In considering the effects of duodenal fistula, not only must the loss of body fluids be taken into account, but also the loss of a part of the duodenal and gastric secretions.[14] It is estimated that from approximately 250 to 400 c.c. of hydrochloric acid is formed by the normal gastric mucous membrane of a dog in twenty-four hours. When there is a duodenal fistula, part of this acid is lost through it. If this is a factor in the production of the alkalosis, a gastric fistula might be expected to show a greater increase in the alkalinity of the blood as a result of greater loss of hydrochloric acid. In parallel studies of chemical changes in the blood, we found that the alkalinity of the blood was greater in the presence of experimental gastric fistula, and, furthermore, that there was a greater increase in the reserve alkalinity of the blood. Similarly, the amount of chlorids in the gastric secretion lost through the gastric and duodenal fistulas is sufficient to explain in part the decrease in the chlorids in the blood. The loss of chlorids through gastric fistula often totals from 3 to 5 gm. in twenty-four hours.

METHODS OF TREATMENT

Lilienthal,[15] in 1901, advocated gastro-enterostomy in the treatment of duodenal fistula, to which Berg,[16] in 1903, added pyloric exclusion. The later work of Keeling,[15] Pannett,[17] Erdman,[18] McGuire[19] and Lahey[20] has directed attention to the low risk and successful outcome of jejunostomy alone in the treatment of duodenal fistula. Cheever [21] has advocated diluting the gastric and pancreatic secretions discharged through the fistulous tract by administering large amounts of fluid by mouth, to promote healing of the fistula. Rigby, from his study of six cases of duodenal fistula, decided that in the less severe cases simple local treatment

12. Tucker, W. J.: Uremia Following Gastro-Enterostomy (unpublished).
13. Dixon, C. F.: The Value of Sodium Chlorid in the Treatment of Duodenal Intoxication, J. A. M. A. **82**: 1498-1502 (May 10) 1924.
14. Ivy, A. C.: Causes of Gastric Secretion, J. A. M. A. **85**: 877-880 (Sept. 19) 1925.
15. Quoted by Colp (Footnote 1).
16. Berg, A. A.: Einseitige Ausschaltung des Duodenums bei perforierender Geschwürbildung an der hinteren Wand des absteigenden Duodenalastes, Zentralbl. f. Chir. **30**: 556-557, 1903.
17. Pannett, C. A.: Contribution to the Treatment of Duodenal Fistula, with the Report of a Successful Case, Lancet **1**: 1109-1111, 1914.
18. Erdman, S.: Laceration of the Duodenum: Duodenal Fistula: Jejunostomy Feeding; Parotiditis Feeding; Recovery, Ann. Surg. **73**: 793-797, 1921.
19. McGuire, Stuart: The Treatment of Duodenal Fistula, Surg., Gynec. & Obst. **30**: 460-461 (May) 1920.
20. Lahey, F. H.: The Treatment of Duodenal Fistulae by Suction, Surg. Clin. N. Am. **4**: 1489-1492, 1924.
21. Cheever, David: Concerning Traumatic Rupture of the Duodenum and Duodenal Fistula, with the Report of a Case, Boston M. & S. J. **173**: 454-457, 1915.

should be tried, but that in the acute cases in which the fistula is large, operative treatment is urgent. It is the general opinion that nonoperative methods of treatment, consisting of the immediate removal of the secretion from the fistula by the motor suction method of Erdman and Cameron, or by the water suction method of Lahey, should first be tried. It seems evident from the results of the experiments just reported that an effort should be made to control the toxemia with sodium chlorid and with sufficient fluid before operation is undertaken.

Berg's[22] method of pyloric exclusion with gastro-enterostomy or jejunostomy in the treatment of duodenal fistula serves three purposes. It preserves the gastric and duodenal secretion in the intestinal tract for normal absorption; it prevents nourishment from being lost through the duodenal fistula, and it thereby restores motility to the upper intestinal tract. The nourishment not only has caloric food value, but probably also stimulates gastro-intestinal motility. Colp, summarizing sixty-one cases of duodenal fistula, shows that the mortality rate following the operation of pyloric exclusion with gastro-enterostomy was about 84 per cent., whereas it was 50 per cent. following jejunostomy. The choice of operative procedure seems to be largely in favor of jejunostomy. One of the best methods of performing a jejunostomy to relieve upper intestinal stasis and to introduce nourishment into the intestinal tract is that of McKenna,[23] who uses two catheters, one directed upward to drain the accumulated duodenal secretion, the other directed downward to supply nourishment to the gastro-intestinal tract. Between feedings, the upper and lower tubes can be connected by means of a hollow glass bobbin which allows the duodenal secretion to pass directly into the jejunum, as advocated by Wilkie.[24] We have used this method with success in two cases of postoperative high intestinal stasis occurring after gastric resection for carcinoma of the stomach.

SUMMARY

In reported cases of duodenal fistula, no explanation has been given of the cause of the associated toxemia. This study of chemical changes in the blood, accompanying clinical and experimental duodenal fistula, has shown that in all instances there are increasing alkalosis, decreasing concentration of chlorids in the blood serum, and progressive rise in blood urea. These changes are similar to those found by Haden and Orr, and by Brown, Eusterman, Hartman and Rowntree, and Dixon, in cases of high intestinal stasis, and the response to intravenous injections of chlorid, glucose and water in cases of duodenal fistula is similar to that obtained by like measures in cases of high intestinal stasis. Postmortem examination of dogs with primary and secondary duodenal fistula shows the presence of a coincident duodenal stasis. The intravenous injection of sodium chlorid in concentrated solution, even if sufficient in amount to raise the blood chlorids to normal, has practically no effect in lengthening the life of animals with duodenal fistula. However, if a sufficient volume of water is added to the sodium chlorid solution and given twice daily, life may be maintained for three weeks or longer, during which time the blood chlorids are raised to their normal level, and the accumulation of nonprotein nitrogen in the blood is prevented. Intravenous injections of glucose solutions and sodium sulphate solutions, although they assist in the elimination of the retained nonprotein nitrogen in the blood, have no effect on the blood chlorids; the dogs died as quickly as though no intravenous injections had been given. The experiments lead to the conclusion that fluid balance plays some part in the toxemia accompanying duodenal fistula. Parallel studies of changes in the blood coincident to experimental gastric fistula show that, with an increase in the amount of acid discharged through the fistulous tract, the increase in the blood alkali reserve is still greater. The total amount of hydrochloric acid and the amount of chlorids discharged from the gastric fistula were sufficient to explain the increase in the alkalinity of the blood and the decrease in its chlorid content. To determine how much of the effect could be attributed to loss of bile and pancreatic secretion, the common bile duct and both pancreatic ducts were transplanted into the jejunum in two dogs, the loss of bile and pancreatic secretions being thus prevented. These dogs showed the same chemical changes in the blood as the dogs with duodenal fistula whose ducts had not been transplanted, and pursued the same clinical course.

Nonoperative methods of treatment, such as the suction method of Erdman, Cameron and Lahey, augmented by intravenous injections of a 1 per cent. solution of sodium chlorid, should be tried first in the treatment of duodenal fistula. When the fistula is large or the condition of the patient acute, operative treatment may be urgent. The operation of choice is then jejunostomy.

22. Berg, A. A.: Duodenal Fistula: Its Treatment by Gastrojejunostomy and Pyloric Occlusion, Ann. Surg. **45**: 721-729, 1907.
23. McKenna, Hugh: Acute Intestinal Obstruction, with Special Reference to Paralytic Ileus Following Abdominal Operations, J. A. M. A. **80**: 1666-1669 (June 9) 1923.
24. Wilkie, D. P. D.: Extra-Abdominal Intestinal Anastomosis Through a Tube, Brit. J. Surg. **11**: 568-570 (Jan.) 1924.

REPORT ON ANTISTREPTOCOCCUS SERUM

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In the thirty or thirty-five years during which the therapeutic use of antistreptococcic serums has been tried and discussed, one might suppose that there had been some crystallization of opinion with regard to their value or lack of value. Certainly they have not achieved anything like general employment. And yet in the advertising matter of commercial houses, statements and reports are printed which might lead one to believe that they are of decided value in the treatment of such conditions as puerperal sepsis, streptococcus septicemia, erysipelas, streptococcus meningitis and pyemia. In the publication of one house, for example, there is included a report of good results under each of the headings mentioned, together with a few others.

If the serum is of genuine therapeutic value, it is entitled to far more general employment than it now enjoys. If not, this fact should be established for the benefit of the rank and file of our profession, who cannot, with their limited individual clinical resources, be expected to settle it scientifically for themselves. Every practitioner is anxious to do everything possible for the cure of his patient, and, in the management of such desperate cases as those often resulting from streptococcic infection, he would wish to use the serum if it possesses therapeutic worth. He will not use it if it is useless or harmful. He is perhaps not always interested in the theory and technic of its preparation, leaving this to those properly trained along this line. Frequently, and perhaps not unnat-

urally, he has even forgotten the distinction between a serum and a vaccine. In the language of the detail man, he "wants results," and he is anxious to know by what means he may secure these results.

In an inquiry into the question of antistreptococcus serum, the Council on Pharmacy and Chemistry of the American Medical Association has been anxious, among other things, to learn the attitude of clinicians toward their use. The shortest cut to such an appraisal appeared to be to ascertain the opinions on this subject of leading clinicians, especially of surgeons, gynecologists and obstetricians. I was commissioned to undertake the task of securing such a collective opinion, and my purpose in this communication is to present a summary of the result.

Letters were sent to a selected group of twenty-five, made up of men who by their preeminence might well be expected to reflect the most trustworthy clinical opinion of the day. Twelve of the group were general surgeons; thirteen were men identified with gynecology or obstetrics, or both. Many of them occupy chairs in large universities or medical schools, and all are the heads of large clinics. These points are mentioned to emphasize the fact that not only do those questioned have ample opportunity for clinical observation themselves, but also they are in such intimate contact with the current of medical literature that it would be almost incredible to suppose that they would not be familiar with and eagerly avail themselves of any really worthwhile therapeutic agency. Each one was asked for "a general personal estimate" of the value or lack of value of antistreptococcic serum.

The replies can be placed in three groups, as follows:

Group 1. Sixteen replies were unequivocally unfavorable, the expressions of disfavor varying considerably in degree. None, however, leave any doubt as to the opinion of the writer.

Group 2. One reply stated that the author "did not know anything about antistreptococcus serum."

Group 3. Eight indicated that in certain cases or for certain indications it might be of service. Some of the replies in this group might almost as well be construed to place the writers in the first group.

In order that the reader may draw his own conclusions, it seems worth while to epitomize the replies by giving literal quotations of the expressions used by the writers. It may be added that nothing in the context of any letter changes the impression obtained from the "key" expression quoted. It may also be stated that, in Group 3, the extracts contain all that the various writers have written in favor of the serum.

GROUP 1

1. "It seems to be the consensus of opinion here that they are of no value."
2. "In my limited experience, it has been rather disappointing."
3. "I gave them a fair trial for one year and felt that they did no good and carried a certain threat of harm, so that we no longer use them."
4. "I have been disappointed in the use of this product."
5. "It seems to me that there is no evidence in favor of this serum."
6. "I have never found the slightest value clinically in antistreptococcus serum."
7. "This serum is of no value, and I have not employed it for a number of years."
8. "It probably has little if any value."
9. "As the various serums have been developed over a term of years we have tried them out. I cannot think of one instance in which I consider the patient was benefited, or progress of the disease in any way abated" (from the head of one of the largest obstetric clinics in America).
10. "I have occasionally given it, but I cannot say that I have found it of any particular value."
11. "The consensus of opinion is that it is of very doubtful value. My own personal experience thoroughly confirms this."
12. "In my entire experience I have had no grounds to feel that it has been of the slightest value in any case."
13. "In my own opinion, antistreptococcus serum is without therapeutic value."
14. "What little experience I have had has been unsatisfactory. It is owing to this dissatisfaction that I have not used it more."
15. "I have never thought very much of the use of antistreptococcus serums, and have had very little experience with their use."
16. "I gained the impression, both from my personal experience and from reading, that it is without practical value. Unless some change in its mode of production and potency is made, I shall consider its use a waste of money, and as giving unjustified hope to the friends of infected patients" (from the professor of obstetrics in a leading medical school).

GROUP 2

17. "Personally, I do not know anything about antistreptococcus serum."

GROUP 3

18. "I have gotten results, or thought I did, in some instances."
19. "I have occasionally seen the most brilliant results in virulently infected cases, results so sudden and striking that I am convinced if the proper strain happens to be selected, the serum is of the greatest benefit. In the majority of cases no benefit is observable, but I have never known the serum to do harm, given properly; therefore I would continue its use in selected cases."
20. "Personally, I have no confidence in antistreptococcic serum in an acute streptococcic disease. I have not seen any benefit in chronic streptococcic diseases. I am inclined to think that it may be of value if administered as a prophylactic where a streptococcic infection may be anticipated or feared, although of this I am not certain."
21. "In my experience there is practically no curative value to antistreptococcus serum; on the other hand, it has a definite protective action producing an immunity as does diphtheria serum in the potentially infected case."
22. "My personal opinion is that antistreptococcic serum is just about ready to develop into something of value."
23. "I have felt that it did good if the case was a rather mild sepsis; but in cases of acute fulminating sepsis, particularly in childbirth or abortion, I have found it entirely valueless."
24. "I have always felt that the indiscriminate employment of serums which is induced by the widespread advertising is harmful, especially in household practice. But undoubtedly the employment of this measure is productive of some good results under expert observation and attendance."
25. "My experience with the commercial products is limited, but I have seen good effects that seemingly were attributable to the serum. In cases in which good effects are obtained, no doubt the immunologic state of the infecting organism was like that of the strain or strains with which the serum was prepared. In the diseases in which the infecting strains are more homogeneous, as epidemic poliomyelitis, epidemic hiccup, epidemic encephalitis, scarlet fever and erysipelas, the problem is greatly simplified and therapeutic results of great value have been obtained. I therefore feel that the good from the antistreptococcus serums now on the market is necessarily limited but that there is an undoubted future for their use in specific diseases in which the strains are immunologically homogenous" (from a leading surgeon and his bacteriologic colleague).

SUMMARY

Of twenty-five leading surgeons, gynecologists and obstetricians who were questioned as to their opinion of antistreptococcus serum, sixteen considered it of no

value, one said he knew nothing about it, and eight expressed the opinion that, while usually unsatisfactory, it might for certain indications be of real value. The chief of these was for a supposed protective or prophylactic action, while occasional good results are mentioned where the proper strain of streptococcus happens to be selected. Not a single one of the twenty-five questioned evinced any degree of enthusiasm for the serum.

INJECTION OF THE SCIATIC NERVE AS SUBSTITUTE FOR FEMORAL PERIARTERIAL SYMPATHECTOMY

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AND
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Few operative procedures have aroused more interest in recent years than has periarterial sympathectomy. This operation, devised by Leriche and having as its principle vasodilation following stripping of the adventitia of the main artery of the part, is still the object of trial and speculation.

Many anatomists and surgeons are at variance with the theory that a large part of the vasomotor nerve fibers course to the arterioles and capillaries of the extremities within the adventitia of the parent arteries.

Langley[1] resected the lumbar sympathetic ganglions in cats and secured vasodilatation in the extremities, which was abolished when the sciatic and crural nerves were severed. Kramer and Todd[2] studied the distribution of the vasomotor fibers to the arm, and Potts[3] made a similar study of the innervation of the blood vessels of the leg with similar conclusions—that the nerve fibers are supplied to the blood vessels at regular levels throughout their course, and that only a relatively small number of fibers accompany the larger arterial stems to terminate in the arterioles and capillaries.

Milkó[4] stimulated the sheath of the femoral artery electrically in dogs and secured no plethysmographic changes. Vasodilatation was secured, however, when the sciatic nerve was severed. Schilf[5] secured no increase in the blood flow by cannula in dogs, when the adventitia of the femoral artery was stimulated. Leriche,[6] however, states that experimental animals are not satisfactory for the study of sympathectomy, and reports a temperature increase in the foot of from 2 to 3 degrees C. for about fifteen days, as the average result of femoral sympathectomy in human subjects.

Läwen[7] stretched the sciatic nerve and the saphenous nerve in an old subject as a remedy for painful arteriosclerosis and subnormal temperature in one foot. He produced a "hot foot" and symptomatic cure but also motor paralysis. Capillary microscopy showed dilated capillaries in the toes of the side operated on. Two years after the operation, there was still 1.5 degrees difference in temperature between the two feet, Läwen[8] later used ethyl chloride to freeze the sciatic nerve in addition to stretching and crushing, and he states that by this means he avoided amputation in an early case of senile gangrene.

Wiedkopf[9] noted that after blocking of the brachial plexus (three trunks) with procaine, the temperature of the corresponding hand was raised 4 or 5 degrees for several hours. He found no plethysmographic changes in the dog's foot following femoral sympathectomy, but a marked change following interruption of the sciatic nerve.

Lewis and Gatewood[10] have used a 60 per cent alcoholic injection into the nerve trunks in the treatment of causalgia. Callander[11] secured no increase in blood pressure following sympathectomy and does not believe the main vessel to be the pathway for the vasomotor nerves.

Periarterial sympathectomy is not free of difficulty and danger. Brandenburg,[12] in a collection of 103 cases of eight surgeons, reports three cases of secondary hemorrage and one of "spurious aneurysm" following femoral sympathectomy. Milkó[4] reports perforation of the femoral artery following sympathectomy. Matons[13] reports a similar accident in the case of the external iliac artery. One of us has on two occasions found it necessary to suture pinhole openings in the femoral artery during the performance of sympathectomy, with no ill effects.

As sympathectomy is not without risks and is attended by conflicting and irregular results, the sciatic nerve was turned to as a means of securing vasodilatation and improved circulation in the extremities in the cases to be reported.

RESULTS OF CLINICAL INJECTION OF SCIATIC NERVE

Twelve patients, all males, ranging in age from 9 to 70, suffering from extensive tropical ulcer of the lower third of one leg, were subjected to open injection of the sciatic nerve at the Hospital Santo Tomas, Panama, during the summer of 1924. The nerve was exposed in the middle third of the thigh (to avoid the highest muscular branches) and injected with a hypodermic needle and Luer syringe. Six patients were injected with physiologic sodium chloride solution, solutions of procaine, and 5 per cent alcohol solutions with slight or no vasodilatation. The remaining six were injected with 15 per cent alcohol so as to produce pronounced "ballooning" of the nerve for 2 or 3 cm. of its course. Usually from 5 to 10 cc. of the solution was required to produce this, depending on the number of puncture holes that are made with the needle and the amount of solution that escapes. The nerve is lifted up with tapes, and stretching is avoided.

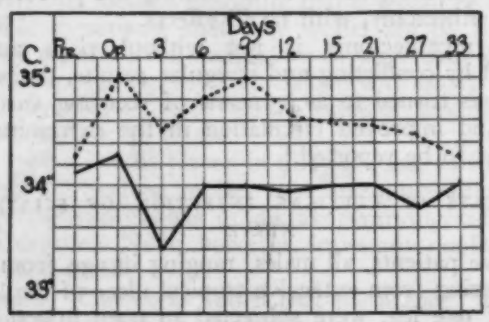
In all the cases so treated, vasodilatation of the corresponding foot and lower third of the leg developed, as shown by flushing and hyperthermia of the parts. The average duration of vasodilatation was about one month, and the average temperature increase throughout the entire period was 1 degree C., being highest for about seven to ten days after the injection and then falling slowly to the temperature of the uninjected leg, as shown in the chart. In control cases of similar leg ulcers, the temperatures taken daily over long periods were found to be 0.13 degree higher on

1. Langley, J. N.: J. Physiol. **58**: 70 (Oct.) 1923.
2. Kramer, J. G., and Todd, T. W.: Anat. Rec. **8**: 243, 1914.
3. Potts, L. W.: Anat. Anz. **47**: 138, 1914.
4. Milkó, W.: Zentralbl. f. Chir. **51**: 513-515 (March 15) 1924.
5. Schilf, E.: Klin. Wchnschr. **3**: 346 (Feb. 26) 1924.
6. Leriche, R.: Presse méd. **30**: 1105-1108 (Dec. 23) 1922.
7. Läwen, A.: München. med. Wchnschr. **69**: 389-392 (March 17) 1922.
8. Läwen, A.: Centralbl. f. Chir. **50**: 1346-1350 (Sept. 1) 1923.
9. Wiedkopf, O.: Klin. Wchnschr. **3**: 728-729 (April 22) 1924.
10. Lewis, Dean; and Gatewood, Wesley: Treatment of Causalgia, J. A. M. A. **74**: 1 (Jan. 3) 1920.
11. Callander, C. L.: Ann. Surg. **77**: 15-29 (Jan.) 1923.
12. Brandenburg, K.: Med. Klin. **20**: 532-535 (April 20) 1924.
13. Matons, E.: Semana Méd. **2**: 98-103 (July 13) 1922.

the side of the ulcer. Temperatures were taken by inserting the bulb of a thermometer between the second and third toes of each foot.

Of these six patients, three developed varying degrees of paralysis. One had paresthesia of the toes lasting for twenty-two days; another, anesthesia and paresis of the foot lasting fifty days, and the third, anesthesia and paralysis of the foot which had persisted when last seen (sixty days after injection) but had developed no toe drop or limp in walking. This patient was emaciated and anemic at the time of injection, and had a thin sciatic nerve and attenuated substance of Schwann. In general, the patients with some degree of motor or sensory disturbance following the injection showed the most marked vasodilatation, the patient with the complete paralysis averaging 2.07 degrees C. difference in temperature for fifty days. The lowest average was 0.52 degree C. elevation in temperature, in a man, aged 58, with marked arteriosclerosis.

In every case, healing of the leg ulcer was apparently hastened by the improved circulation of the limb, all of the cases in which injection was done being healed within five weeks. This is considerably faster than the average time required for the healing of tropical leg ulcers. The stay in bed of two weeks



Composite temperature curve of the feet of six men treated with 15 per cent alcoholic injection of the sciatic nerve for tropical leg ulcer: broken line, injected leg; solid line, uninjected leg.

following the injection doubtless was a factor in the improved healing rate. Granulations in the injected patients were redder and healthier than in the controls.

A recent series of sciatic injections in dogs by Mosser and Taylor[14] under the direction of Dr. Joshua Sweet in the laboratory of experimental surgery of the University of Pennsylvania confirm in principle these clinical observations, with the exception that in dogs in all cases some degree of paralysis developed, which, however, was of limited duration.

CONCLUSIONS

1. Injection of the sciatic nerve with 15 per cent alcohol is a far more reliable means of producing hyperthermia than is periarterial sympathectomy of the femoral artery. It was found of use in the treatment of tropical leg ulcer.

2. It is possible in human subjects to produce hyperthermia without producing any paralysis.

3. The degree of hyperthermia is proportional to the degree of nerve interruption; i. e., to the degree of paralysis produced.

4. The more prolonged the infiltration of the nerve, and the more handling, needling and traction employed, the greater will be the degree of interruption. Thorough injection of 2 or 3 cm. of the nerve is necessary, with even distribution of the solution throughout the nerve.

5. Patients who are thin and emaciated should be injected less vigorously than well nourished subjects.

6. Any paralysis or paresis is of comparatively short duration (from two to three months).

7. Arteriosclerotic patients do not respond well.

8. Marked variations in the temperature of the feet and toes result from atmospheric temperature changes, wetting, effect of heat and sunlight, bedclothes and use of the legs. Daily measurements over long periods are necessary to establish temperature differences.

9. The indications for sciatic injection are those for sympathectomy; i. e., any condition in which it is desired to improve the circulation of an extremity, such as threatened gangrene, Raynaud's disease, intermittent claudication, erythromelalgia, early tuberculosis, ulceration, trophic disturbances, etc. It is not of value in arteriosclerotic gangrene and Buerger's disease.

14. Mosser and Taylor: To be published.

THE REPAIRED HEART

ITS BEHAVIOR IN BRONCHOPNEUMONIA

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Repair of the lacerated heart has become fairly common. The incidence and success of this operation have recently been summarized by Davenport.[1] Most cases that terminate successfully are uncomplicated, and the ability of the repaired heart subsequently to carry on during acute illnesses or to meet the demands of an active life has seldom been reported.

In the case here reported, the heart, in which a large laceration had been sutured, was called on in three weeks to endure the added strain of a severe bronchopneumonia.

REPORT OF CASE

A. L., a negro laborer, aged 24, was stabbed just inside the left nipple with a long bladed pocket knift, on the evening of July 23, 1925. He was seen in the emergency room of the Youngstown Hospital forty-five minutes later, in extreme shock and practically pulseless from the severe hemorrhage. The chest was at once opened, under ether and oxygen analgesia, portions of the third and fourth ribs being resected and a triangular flap being turned back. This exposed the pericardium, in which a rent was seen. On enlarging this, I could see the heart beating at a delirious rate and showing a laceration 1½ inches (3.8 cm.) long high on the left ventricle. The heart was brought up into the wound and the laceration closed with four interrupted sutures of medium silk. The pericardium was closed by a continuous suture of chromicized catgut and the chest wall with interrupted silkworm-gut. In the meantime the intern was giving physiologic sodium chlorid solution in the vein.

The patient reacted well and two weeks later was allowed up on a back rest. The temperature was 98.4; respirations, 22; pulse, 100. Except for occasional fleeting pains in the cardiac region, he was comfortable. No treatment was used for the rapid pulse rate other than an ice cap over the heart.

On the evening of August 12, the twentieth day, the temperature rose to 101.4, with no symptoms. The next day it rose higher; the patient appeared quite ill and complained of pain in the right side of the abdomen. A friction rub could be heard at the right base. Respiration became labored, as signs became more definite in the right lower lobe, and a new area of consolidation appeared in the middle lobe. The patient was depending almost entirely on the right lung for

1. Davenport, G. L.: Suture of Wound of the Heart: Ligating the Interventricular Branch of the Coronary Artery and Vein, J. A. M. A. 82: 1840 (June 7) 1924.

aeration, as the left was partially collapsed. Soon there were signs of involvement in the left apex.

The heart at this time was doing fairly well. The pulse was 120, regular and of good volume, although the systolic blood pressure was only 100. Digitalis was given in the form of 30 minims (1.9 cc.) of a standardized tincture every four hours. Very little effect was noticed from this dosage, the rate and blood pressure remaining the same. In a few days he became nauseated and the dose was reduced, although the heart did not exhibit the usual phenomena of digitalization.

After a week's illness some improvement was noticed, and, August 28, the temperature was down and the patient was comfortable, although bronchial breathing and crepitant râles persisted in the right middle lobe for some time. By September 13, the patient was up and about. The pulse rate remained at 100, increasing to 120 on moderate exercise but returning to 100 after three minutes' rest. The heart was of normal size, displaced to the right, lying directly in the midline. There was an adhesive pericarditis with systolic retraction of the chest wall. The sounds had good muscular quality, and no murmurs were heard.

COMMENT

The behavior of the repaired heart in acute pulmonary infection is probably influenced by the situation of the injury. It seems reasonable to assume that the commonly injured right ventricle would be more severely handicapped in forcing blood through the congested lung. Damage to the right auricle would be likely to produce greater disturbance of rate and rhythm.

In this case the heart behaved satisfactorily in every respect except that of the rate. Although rapid, the pulse was always regular in time and the beats were equal in volume. At the time of maximum lung involvement, the circulation was only moderately embarrassed.

Digitalis in the dosage given exhibited but little effect in slowing the heart. It is assumed that the vagus stimulation was not sufficient to overbalance the increased irritability of the myocardium. The presence of nonabsorbable suture material would perhaps tend to prolong the irritability.

226 North Phelps Street.

Clinical Notes, Suggestions and New Instruments

ACCESSORY LOBE OF LIVER ATTACHED ONLY TO THE GALLBLADDER

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While recently exploring the abdomen of a young woman, with a clinical and a roentgen-ray diagnosis of chronic appendicitis with adhesions deforming the duodenum, which diagnosis was correct, I encountered a neat curiosity never previously noted in my work.

Attached to the upper surface of a perfectly normal gallbladder was a miniature lobe of liver tissue, measuring about 1½ inches (3.7 cm.) transversely and about 1 inch (2.5 cm.) in the opposite direction.

The center was about one-fourth inch (0.6 cm.) thick and was attached firmly to the gallbladder, while the edges were thin, well defined, and could be lifted a short distance from the surface of the gallbladder.

This little accessory lobe had no connection whatever with the liver, being some distance away, and no connecting blood vessels were visible.

As the gallbladder appeared perfectly normal and it seemed unwise to add any more raw surfaces to those already in process of repair, this interesting curiosity, after demonstration to those present, was allowed to remain.

324 Main Street.

FULL VISION BIFOCAL OPERATING SPECTACLES*

MYRON METZENBAUM, M.D., CLEVELAND

Many forms of glasses have been devised to enable persons to see at a distance with one part of the lens and at a close range with the other part.

The bifocal is usually placed in the lower segment, although sometimes it is in the upper segment or in the center. These various arrangements of lenses afford either long or short distant vision through only a part of the lens, and it is impossible to view the whole field in all directions.

The spectacles recently devised consist of two pairs of lenses in two separately hinged frames. The first pair gives full vision for distance. When the second pair is lowered against the first pair, it supplies the additional lenses necessary for full near vision. For certain work, the full vision is desirable or even necessary.

Full vision bifocal operating spectacles, consisting of two pairs of lenses in two separately hinged frames.

For the ear, nose and throat specialist whose offices are usually made up of several units and who goes back and forth from one patient to another, this type of spectacles is very practical. During an examination the additional frame is lowered, giving a full field near vision, and it is raised when walking to the next patient.

In the operating room the spectacles are worn for distant vision, and the nurse lowers the additional frame when the operator wishes to begin.

Each frame holds a pair of single lenses, or one or both pairs may be made up of bifocals, so that various combinations can be obtained.

The spectacle frames are neither patented nor copyrighted, and at present are hand-made by the American Optical Company, Rose Building, Cleveland.

736 Rose Building.

* Read before the Section on Laryngology, Otology and Rhinology at the Seventy-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., May, 1925.

Special Articles

DIPHTHERIA IN CERTAIN LARGE CITIES OF EUROPE IN 1924*

The diphtheria death rates in the large cities of Great Britain in 1924 (Table 1) were on the whole very similar to those observed in the large cities of the United States for the same year.[1] The range, however, was somewhat greater (in the United States, from 1.6 to 23.0; in Great Britain from 0.0 to 25.7). A larger proportion of the British cities had a rate of under 10 (73 per cent, as compared with 54 per cent of the cities in the United States). The Scottish cities Glasgow, Edinburgh and Dundee all report high rates; that of Aberdeen is relatively low. The average death rate from diphtheria in the Scottish cities for the pre-antitoxin period 1858-1895 was much higher than that of most English towns. Manchester had a death rate eight times that of Birmingham, and London had a rate almost exactly like that of New York. There is no obvious relation between the degree of industrialization of a city and its diphtheria death rate.

TABLE 1.—*Death Rates of Cities in Great Britain from Diphtheria (Including Croup) per Hundred Thousand Population, 1924*

Southend	0.0	Woolwich	6.4
Rhondda	0.4	Hull	6.6
Birmingham	1.0	Salford	6.6
Walthamstow	2.0	Aberdeen	6.8
Bradford	2.1	Swansea	6.8
Tottenham	2.2	Portsmouth	7.2
East Ham	2.4	Middlesborough	7.3
Huddersfield	2.6	Leyton	7.5
Nottingham	2.6	Burnley	7.6
Stoke-on-Trent	2.6	Manchester	8.1
St. Helen's	2.7	Liverpool	8.4
Stockport	3.0	Southampton	10.2
Croydon	4.0	Plymouth	10.5
Sheffield	4.0	Gateshead	10.8
Cardiff	4.4	South Shields	11.1
Wolverhampton	4.4	London	12.3
Preston	4.8	Glasgow	12.6
Sunderland	4.8	Greenwich	13.6
Newcastle-on-Tyne	4.9	Leicester	14.5
Brighton	5.0	Norwich	14.5
Willesden	5.2	Bristol	15.8
Lewisham (Catford)	5.5	Edinburgh	16.8
Leeds	5.7	Derby	20.9
Coventry	6.0	Dundee	25.7

TABLE 2.—*Death Rates of Cities in Germany from Diphtheria (Including Croup) Per Hundred Thousand Population, 1924*

Lubeck	0.8	Saarbrücken	5.8
Gelsenkirchen	0.9	Altona	5.9
Krefeld	1.5	Leipzig	5.9
Münster in Westphalia	1.9	Brunswick	6.4
Dresden	2.1	Halle	6.6
Düsseldorf	2.1	Hamborn-on-the-Rhine	6.8
Nuremberg	2.2	Karlsruhe	7.3
Hanover	2.3	Chemnitz	7.4
Berlin	2.9	Mainz	7.6
Hamburg	3.0	Bochum	7.7
Barmen	3.1	Magdeburg	7.7
Aachen	3.2	Bremen	7.8
Frankfort-on-the-Main	3.6	Cassel	7.9
Stuttgart	4.2	Stettin	8.7
Elberfeld	5.1	Cologne	9.6
Duisburg	5.5	Augsburg	9.8
Breslau	5.6	Plauen	11.5
Munich	5.7	Mannheim	19.5
Essen	5.7		

In Germany (Table 2) the range for the thirty-seven cities is from 0.8 (Lubeck) to 19.5 (Mannheim). Berlin and Munich have very much lower death rates than either London or New York (Berlin, 2.9; Munich, 5.7; New York, 11.9, and London, 12.3). It might have been supposed that climatic conditions in Germany would make for a somewhat higher rate than in England, but 59 per cent of the German cities had rates of 5.0 and over, and 60 per cent of the British cities had the same rates. In the decade 1880-1890, the diphtheria mortality was considerably greater in Berlin and the German cities than in Great Britain.

TABLE 3.—*Death Rates of Cities in France from Diphtheria (Including Croup) Per Hundred Thousand Population, 1924*

Toulouse	0.0	Brest	6.7
Roubaix	0.9	Le Havre	6.7
Nantes	1.6	Lyons	7.1
Marseilles	1.8	Nancy	7.7
Rheims	4.0	Lille	8.0
St. Etienne	4.2	Strasbourg	9.6
Bordeaux	4.8	Rouen	11.3
Paris	5.5		

TABLE 4.—*Death Rates of European Cities Outside Great Britain, Germany and France, from Diphtheria (Including Croup) Per Hundred Thousand Population, 1924*

Geneva, Switzerland	0.0	Copenhagen, Denmark	4.9
Ghent, Belgium	0.6	Odessa, Russia	5.2
Bucharest, Roumania	1.2	Lorca, Spain	5.3
Liége, Belgium	1.2	Lisbon, Portugal	6.1
Brussels, Belgium	1.4	Vienna, Austria	6.1
Oslo, Norway	1.9	Budapest, Hungary	6.3
Helsingfors, Finland	1.9	Stockholm, Sweden	6.3
Utrecht, Holland	2.0	Oporto, Portugal	7.0
Amsterdam, Holland	2.1	Leningrad, Russia	7.5
Basle, Switzerland	2.1	Lwow, Poland	7.9
The Hague, Holland	2.3	Warsaw, Poland	8.2
Danzig, Danzig	2.7	Murcia, Spain	9.0
Zurich, Switzerland*	2.9	Dublin, Irish Free State	9.6
Gothenborg, Sweden	3.1	Yaroslav, Russia	12.0
Antwerp, Belgium	3.5	Ufa, Russia	12.4
Riga, Latvia	3.5	Cartagena, Spain	12.8
Vilna, Poland	3.9	Rome, Italy	12.9
Graz, Austria	4.6	Moscow, Russia	19.0
Athens, Greece	4.7		

* Does not include nonresidents.

The cities in France (Table 3) make a particularly good showing in diphtheria death rates, only one having a death rate above 10, and one large city (Toulouse) reporting no deaths from this infection. Paris, where diphtheria seems to have been about the same as in London during the preantitoxin years, had a rate of only 5.4 in 1924, less than half that in New York or London but nearly double that in Berlin.

Of the other European cities (Table 4) Geneva is the only one on the honor roll, with no deaths from diphtheria. For the most part, even in northern Europe, diphtheria death rates in 1924 were very low. It is a little surprising to find that Rome has a higher diptheria mortality than the cities of Holland, Belgium, Norway and Sweden.

* The data for this article were obtained at the same time as the data for the article on Typhoid in Certain Large Cities of Europe in 1924 (THE JOURNAL, December 12, p. 1890), from the health officers of the respective municipalities. All the cities are of a population exceeding 100,000, the estimates being the same as those used in the typhoid tables. Certain cities are not represented in these lists, because of the miscarriage of requests or replies.

1. Diphtheria Mortality in the Large Cities of the United States in 1924, J. A. M. A. 84:1269 (April 25) 1925.

THE TECHNIC OF MEDICATION

A SERIES OF ARTICLES ON THE METHODS OF PRESCRIBING AND PREPARING, THE INDICATIONS FOR, AND THE USES OF VARIOUS MEDICAMENTS *

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(Continued from page 117)

GELATIN FILMS

Gelatin films are mixtures of glycerin, gelatin and water in varying proportions, and were introduced by Unna, about 1880. They are used to secure soothing action and protection (while permitting evaporation of sweat), to obtain support, and at times for prolonged medication.

The following two formulas, taken from the National Formulary, will probably be found sufficient for most purposes:

FIRM ZINC GLYCEROGELATIN (N. F.)

	Gm. or Cc.
Zinc oxide	10
Glycerinated gelatin	30
Glycerin	25
Water	35

SOFT ZINC GLYCEROGELATIN (N. F.)

	Gm. or Cc.
Zinc oxide	10
Glycerinated gelatin	20
Glycerin	35
Water	35

The National Formulary also contains salicylic acid glycerogelatin and iodoform glycerogelatin, each of which has 10 per cent of the active ingredient. Like all other official formulas, these preparations may be prescribed merely by giving the official name.

As a general proposition, as soft a film as possible should be applied; but, of course, it must not be liquid at body temperature. For agents that lessen the gelatinizing power of the mixture, such as phenol, resorcinol, salicylic acid, tar or ammonium ichthyolate preparations (from 5 to 10 per cent), the harder jelly should be employed. For insoluble or slightly soluble powders, such as sulphur, iodoform, ammoniated mercury or chrysophanic acid, the softer preparation is used. Substances that precipitate gelatin, such as tannic acid or mercuric chloride, cannot, of course, be applied in this manner.

These films are useful in the treatment of obstinate ulcers or eczema of varicose legs. By means of them one may at one and the same time obtain protection of the lesion and support for the varicose veins. They are also useful for the relief of itching.

The following technic is employed in the treatment of varicose veins:

The jelly is liquefied on the water bath and applied, while still fluid, but not hot, to the affected limb by means of a paint brush. Then a gauze roller bandage is run up the limb; the bandage is not reversed (as is ordinarily done) but is cut in such a way that the surface remains perfectly smooth and even. Then a coat of jelly is applied, and another roller bandage is added; this is continued until the cast is of sufficient thickness. The dressing is best put on in the morning before the patient arises, as the horizontal position has depleted the leg and reduced swelling. Otherwise preliminary use of elevated posture and careful effleurage are required to secure the depletion necessary for best results. The ulcer or eczema is covered as if it did not exist. As soon as a secretion shows through the cast, a window is cut, the lesion is exposed, and it is treated with appropriate dressing as often as is required. The cast itself may remain in place for two weeks or even longer.

PLASTERS

Plasters are adhesive soft masses with a melting point higher than the temperature of the skin. They are generally obtained thinly spread on a support. The formerly official plasters with lead oleate as a base (diachylon plaster) have been so completely replaced by rubber plasters that the new Pharmacopeia recognizes these, even though it does not give a detailed formula for their preparation, as this requires the facilities of a manufacturing establishment.

Adhesive plaster, no doubt the most important of all the plasters, is a mixture of rubber (about 30 per cent) with resins and waxes and a filler of absorbent powder, usually zinc oxid (20 per cent). The face of the plaster is generally covered with muslin or similar material, which must be removed before the plaster is applied. If the plaster is not sufficiently adhesive, the defect can be remedied by warming it slightly. Before applying the plaster, it is well to cleanse the skin, preferably with benzine. If the surface is quite hairy, it should be shaved. The plaster may be left in place as long as the skin tolerates it without discomfort. The time varies greatly with different individuals. It may usually be left on for a week or two, though some very sensitive skins do not tolerate it for more than a day or two. The plaster is most easily removed by loosening its upper edge and pouring a little benzine, ether or volatile oil between it and the skin, at the same time working it loose with the finger. If the skin is very irritable, oil may be used instead, but it acts much more slowly.

To enumerate the uses of adhesive plaster would require a list much beyond the limits of the available space. It has become indispensable in surgery for approximation, immobilization, support, compression and bandaging. Insufficiently appreciated perhaps is its use as an analgesic. It is a self-evident truism that any pain aggravated by motion can be relieved by limiting that movement or making it impossible, and adhesive plaster is frequently the best means of accomplishing this.

Belladonna plaster has the nerve-end benumbing properties of the alkaloids of the atropine series, added to the mechanical analgesic properties of a plaster support. The plaster is usually made porous, so as to permit the evaporation of sweat. This causes it to be borne better by the skin than the adhesive plaster so that it may usually be left in place for a week or two, but it also lessens the adhesive and supporting power. It is probably most efficient in painful conditions accompanied by skin hyperesthesia.

Cantharides plaster is adhesive plaster made vesicating by cantharides, which are commonly called "Spanish flies," though they are neither Spanish nor are they flies, but beetles found in tropical and temperate zones throughout both hemispheres. This is an exceedingly irritative preparation, which, when applied to the skin, first causes a redness and burning; then, usually within eight hours, blistering and pain; and, if kept in contact

* This is the third of a series of articles on "The Technic of Medication." When completed the articles will be assembled in book form.

for a much longer period, deep inflammation and sloughing.

The Pharmacopeia describes this plaster as being cantharides cerate spread on adhesive plaster with a margin left around the edges; a cerate differing from a plaster by not being sticky. If this plaster were as sticky as adhesive plaster, the epidermis raised by the blistering would be pulled off when the plaster is removed, which is generally not desired. Manufacturers put on the market and druggists generally dispense a slightly adhesive rubber plaster rendered vesicant by cantharides spread clear across the backing. It is well to oil the face of the plaster before applying it; and, if it is found not sufficiently sticky, to keep it in place by a strip of adhesive plaster. As a rule the application is removed at the end of six or eight hours. If vesication is not complete, a poultice or compress may be applied. In young children, application for from two to four hours usually suffices. It is better to use several plasters, as small as an inch square, close together, than to employ a very large one, as the subsequent dressing is much simpler. The blebs are pricked separately aseptically at their most dependent part, and a dry absorbent dressing is applied, kept in place by a few strips of adhesive plaster. If the raised epidermis has become lost the raw surface must be dressed in accordance with the principles governing the treatment of an ulcer.

Blisters should never be placed over acutely inflamed joints, over very sensitive areas, such as the scrotum or the mammae, or over bony prominences. Cantharis vesication is contraindicated in nephritis; and great care is necessary in ordering blisters in pregnancy, in persons with hemorrhagic tendencies, or in the feeble, the very young or the very old.

The possible indication for blisters is in chronic inflammatory or painful conditions, as in chronic pleurisy, pericarditis, neuralgias and myositis.

Mustard plasters are not really plasters, as they are nonadhesive, being merely papers on which defatted powdered black mustard has been fixed by means of rubber. They are employed by being soaked in warm —not hot—water for about two minutes and being applied to the skin; if the skin is very sensitive, it may be protected by a thin piece of wet cloth between it and the plaster. On a sensitive skin, from five to ten minutes' application may suffice. Generally, mustard plasters are left in place for fifteen minutes; it is not well to leave them much longer, as they may produce a painful, slow-healing blister.

Mustard plasters constitute an admirable form of counterirritation in acute, deep congestion and inflammation; by means of their reapplication whenever the previously produced redness has faded, it is possible to maintain cutaneous hyperemia for any desired length of time.

The mustard poultice has the advantage over the mustard plaster in that it can be prepared at home, and made of any desired size or shape and of such strength as to meet the requirements of the skin on which it is to be used. Thus, for maintaining rubefaction of the chest in children with bronchitis or bronchopneumonia, a piece of cloth or even paper the size of the chest from axilla to axilla may be spread with a dough composed of mustard and flour in varying proportions (as will be noted below) and lukewarm water. The face of the poultice is covered with cheese cloth; and, prior to application of the poultice, the skin is anointed with petrolatum. The poultice may be left in place for from fifteen to thirty minutes; the same poultice may be applied to the back for an equal length of time. Such treatment may be repeated every eight hours. The adult skin tolerates a mixture of mustard and flour in equal parts for the specified length of time without excessive irritation. An infant's skin will probably not bear an application stronger than 1 part of mustard to 3 parts of flour. For successive applications, the strength is varied according to the condition of the skin. If it is still hyperemic, the strength is reduced; if the previous application did not produce sufficient hyperemia, the strength might be increased.

III. LOTIONS OR WASHES

Lotions are aqueous or hydro-alcoholic liquid preparations applied without massage, and intended chiefly for epidermic action. When a lotion is used for immersion of the body or a part of the body, it is spoken of as a bath. When used on gauze or lint or other absorbent material, the application is spoken of as a compress. A lotion for the eyes is popularly known as eye water, or eye drops. A wash for the throat is called a gargle. When a lotion is to be introduced into the passages of the body by means of a syringe, it is spoken of as an injection, when it is intended to remain for awhile; or an irrigation, when outflow balances inflow. A rectal injection is known as an enema, clyster or lavement. Here applications to the skin will be discussed. The others will be taken up in their appropriate places.

In the composition of a skin lotion, a great difference must be recognized according to whether the epidermis is broken or not. Thus, when the epidermis is not damaged, alcohol might be used as a solvent; when the surface is broken, it must be much diluted, as strong alcohol is irritating to raw surfaces. Even water is irritating when the skin is highly inflamed and there is a tendency to vesication. When this is the case, as in acute dermatitis or in fresh burns, water must not be applied unless it has been rendered approximately isotonic by some nonirritative body, such as boric acid or sodium chloride. A small amount of glycerin, say 5 per cent, is frequently added to prevent complete drying of lotions and to keep the surface soft and pliable. Addition of a much larger amount of glycerin must be avoided, as glycerin undiluted is hygroscopic, exerting a drying action on the skin, which might be detrimental and irritating to an inflamed or very sensitive surface. On an extremely irritable surface, even 5 per cent of glycerin may be objectionable.

In prescribing lotions, it must be remembered that it is of great importance to adjust the concentration to the sensitiveness of the surface for which the application is intended, the percentage of active ingredient being equivalent in local applications to dosage in internal medication.

When a large amount of fluid is required, as in baths or in rectal or vaginal injections, the active ingredients are ordered of the druggist, in the form of a powder or of a concentrated solution, to be added by the patient to the specified quantity of water. For a child's bath one usually calculates from 50 to 100 liters; for an adult's, 200 liters.

The subscription in case of lotions would simply be: Mix (abbreviated M.). It is hardly necessary to say "Mix," "Make a solution" or "Prepare a lotion." The druggist knows. The transcription, on the other hand, should be explicit and indicate clearly that the remedy

is intended for external use: "Not to be taken," or "For external use only"; if it is to be diluted, to what degree; or dissolved, in what amount of water; and how often it is to be used. When a very poisonous agent enters a lotion, it may be well to have the pharmacist affix a poison label. In such case, it should be explained to the patient that the medicine is poisonous only when swallowed, and that he need not be afraid to apply it to the skin as intended.

As it is of practical advantage to study the composition of lotions as varied in accordance with the effect intended, they are classified here on the basis of their action.

1. *Protective Lotions.*—Insoluble powders are frequently added to lotions for their protective action. Powders are thus prescribed for very irritable inflamed skin, when even the drying action of a dusting powder might be irritating. In general, it is best not to suspend the powder in the fluid by means of acacia or other mucilaginous substances, as in such preparations the powder may on prolonged standing become caked at the bottom of the bottle. Lotions may with advantage be perfumed with rose water. It is sometimes well to impart flesh color, especially to lotions for the face; this may be done by the addition of 1 per cent ferric peroxide. The popularity of calamine lotion is partly due to the fact that calamine (impure zinc carbonate) is almost flesh color. This soothing lotion, so much employed in acute dermatitis, is composed of calamine and zinc oxide, each 8 per cent; glycerin, 2 per cent, with the solution of calcium hydroxide (popularly miscalled lime water[11]) as a vehicle. The formula for it is official in the National Formulary as Calamine Lotion, under which name it may be prescribed.

2. *Emollient Lotions.*—Simple protective lotions, like the calamine lotion, have a drying effect, even when the small amount of glycerin permissible is present. This can be overcome and the lotion made emollient (softening) by the addition of either tragacanth or quince seed mucilage or by incorporating oil with the production of a skin cream.

Skin creams are emulsions for external use, having chiefly an emollient or protective action. As they are not applied with friction and are intended for epidermal action they are really lotions, though they are sometimes called liniments. For the purpose of emulsification, alkalis, particularly the solution of calcium hydroxide (but not ammonia water, because it is irritative) and wool fat are the best agents; wool fat, 1 part, and almond oil, 3 parts, will take up 10 parts of water; wool fat, 1 part, and almond oil, 4 parts, will take up 16 parts of water.

When calamine lotion is found too drying, we may take recourse to the so-called calamine liniment (N. F.), in reality a skin cream, which differs from calamine lotion by the presence of 50 per cent of olive oil, emulsified by the solution of calcium hydroxide.

Lime liniment, also known as carron oil (a term derived from the Carron Iron Works of England, where this preparation first gained popularity in the treatment of burns), which contains equal parts of solution of calcium hydroxide and linseed oil, is also not a liniment—for liniments are applied with friction—but, rather, a lotion. This preparation is used on absorbent dressings as a compress without covering. Though this is a very grateful application to a burn, it has been criticized because, in the first place, it dries into a sticky varnish, which is unsightly as well as difficult to remove; and, secondly, because, being nonantiseptic, it invites infection. The latter objection may be overcome by the addition of an antiseptic, such as thymol (1:2,000); the former, by the substitution of a nondrying oil, such as olive oil, for the linseed oil and by sufficiently frequent reapplication to prevent drying.

As an example of an emollient gum lotion we might cite the formula given by William Allen Pusey for a hand lotion to be used as a detergent, instead of soap, by rubbing it freely over the skin and then wiping it off. It is useful when soap is too irritating, as in cold weather, when less fat than usual is secreted by the skin glands and the skin has a tendency to chap:

		Gm. or Cc.
℞	Oil of rose	0.05
	Oil of lavender	0.10
	Oil of bergamot	0.20
	Tragacanth	5.00
	Boric acid	15.00
	Glycerin	15.00
	Water, to make	1,000.00

3. *Evaporating Lotions.*—The fact that heat is rendered latent by the evaporation of fluid is frequently made use of to obtain cooling effects from the application of a volatile fluid by means of uncovered compresses kept moist. Alcohol, being more volatile, is more efficient than water in its cooling effect. From 20 to 50 per cent alcohol would constitute a typical evaporating lotion. An example of the use of such a lotion is in erysipelas, when diluted alcohol, to which 1 per cent of phenol is added, is found quite comforting to patients, the gauze covering the lesion being kept moist with it.

That cooling applications form the most grateful treatment against the burning pain of burns is self-evident. Such may be obtained by means of compresses or of baths, according to the extent and location of the lesions. For first degree burns of moderate extent, simple cool compresses are best. They are applied, of course, without covering, so as to enlist the aid of evaporation in keeping them cool as long as possible. To avoid the pain that might be occasioned by the frequent changing of the compress required to maintain the desired coolness, it is best to renew merely the outer layers of the compress, leaving the ones next the patient undisturbed. Constant drop by drop irrigation with cool water is a still better method of maintaining the required temperature without disturbing the dressing.

The ice bag is not to be recommended because its weight and low temperature might favor the occurrence of necrosis, which would mean the conversion of a burn of the first or second degree into one of the third degree. For the same reason, real coldness of the compress should be avoided; a degree of coolness should be maintained that is just comfortable to the patient. However, for burns of the second degree, plain water compress treatment is unsuitable, as it favors the formation of large blebs, no doubt by reason of endosmosis. By adding something to the water that will antagonize osmosis into the tissues, these evil effects may be avoided. Thus, a paste of baking soda and water, liberally applied, forms an admirable first aid dressing to a burn. Probably magnesium sulphate solution is still better, as suggested by the striking difference in the results of an experiment of Meltzer:[12] Both ears of deeply anesthetized rabbits were immersed

11. The official waters are aqueous solutions of volatile bodies. Watery solutions of nonvolatile bodies are classified as solutions.

12. Meltzer, S. J.: Magnesium Sulphate Treatment of Burns, J. Pharmacol. & Exper. Therap. **12**: 211 (Nov.) 1918.

in hot water (65 C.) for three minutes. Immediately afterward the right ear was submerged in a 25 per cent solution of magnesium sulphate and the left ear in a 6 per cent solution of sodium chloride for three hours. Of the ear treated with sodium chloride, one third sloughed away. On the other ear there was only a slight sloughing near the tip. Meltzer also employed magnesium sulphate applications in human beings, and asserts that first and second degree burns are invariably arrested in their development when concentrated solutions of magnesium sulphate are applied early; also that third degree burns run a more favorable course under this treatment. Higher concentrations than 25 per cent seemed to have a still better effect.

These results cannot be due merely to hypertonicity of the solution, as the 6 per cent solution of sodium chloride was similarly hypertonic. They must, in addition, be the result of the analgesic action of the magnesium ion. That local anesthesia inhibits, at least temporarily, the phenomena of inflammation has been shown again and again.[13]

That the results would be less striking, when infection is present, can be readily understood. The inhibition of the inflammatory reaction might, in such a case, actually be of disadvantage, especially in view of the fact that magnesium sulphate has no bactericidal effect. However, as a fairly concentrated solution of this salt is bacteriostatic, as shown by Northrup,[14] we can see that the continued use of such a solution in the dressing of a fresh burn would also tend to prevent infection. The finding of Northrup that magnesium chloride had quite an inhibitory effect on the growth of microorganisms suggests the desirability of repeating Meltzer's experiments with this salt, with a view to determining whether it is as favorable in a recent burn as magnesium sulphate proved to be.

In this connection, it might be well to emphasize the desirability of keeping such dressings moist, as drying is harmful to the healing of raw surfaces. The opinion is becoming crystallized and has been voiced, among others, by Bier and by Escher[15] that dry absorbent dressings are detrimental to open wounds and granulating surfaces for the following reasons: Dry dressings are themselves irritative foreign bodies; one would, for example, tolerate neither cotton nor gauze in the eye. This irritation results in excessive discharge, exuberant granulations, and infiltration of the wound edges, thus delaying healing. Drying is an enemy not only to bacterial life but also to the growth of tissue, for "all cells live in water and in running water." From the fluid, cells take their nourishment, and into it they discharge their excrement. Drying is a bitter enemy to all life. To overcome the injury done by absorbent dressings, an excessive inflammatory reaction is required. Granulations grow into the meshes of the dressing; and, in this manner and by the sticking caused from dried up secretion, a layer of newly forming tissue is liable to be removed at each change of dressing. Thus we can see that frequent change of such dressings may greatly delay the healing of a raw surface. When we finally think of the pain produced when the dressings are rudely pulled off, as is done so often, and the dread of change of dressing that this inspires in the patient, we certainly have a superabundance of reasons for discarding dry absorbent dressings for raw surfaces, or for not permitting moist dressings to dry. When a dressing sticks, it should first be softened and loosened, best by a solution of hydrogen peroxide, before it is gently removed. It is still more important to prevent the sticking of dressings, which can be done either by keeping the dressings moist or by some form of lipophil film. Perforated paraffin paper[16] or wide-meshed paraffined gauze[17] are among the means available to prevent the sticking of dressings.

It may seem that the good results reported from the recently advocated treatment of burns by exposure of the bare surface to the air, keeping the covers away from it by "cradling" of the bedclothes, directly contradicts the statement just made that drying is detrimental to wound healing. But it does this by no means. The drying, it is true, kills a surface layer of cells: and, at first, provokes a liberal secretion. This discharge on drying forms a crust, underneath which moisture is retained to a sufficient degree to permit cells to grow and multiply. In other words, the so-called open treatment of burns is merely a variety of film treatment. It is the simplest and probably the most useful method of treatment for burns of the face and head.

Of all the medicated moist dressings for burns, the trinitrophenol compress is by far the most popular. There are good reasons for this. Trinitrophenol, or picric acid, is a powerful antiseptic, having a phenol coefficient of 6.[18] A 1 per cent aqueous solution of trinitrophenol, which is practically saturated, is therefore a more powerful disinfectant against typhoid organisms than a saturated (5 per cent) aqueous solution of phenol. Using a different method of comparison—glass rods dipped in cultures and dried—Ehrenfried[19] found it to kill *Staphylococcus pyogenes-aureus* in two minutes, while a 1 per cent solution of phenol required about 100 minutes to kill these organisms. In addition, trinitrophenol has a great affinity for tissues, on which it fixes itself; and, by reason of its protein precipitant qualities, exerts an astringent action. The hardening of the epidermis thus produced antagonizes bleb formation. Over any raw surface present it forms a protective aseptic scab, which seals up opened lymph spaces and prevents the entrance of infection. This scab also covers exposed nerve endings; and this, together with an intrinsic analgesic action possessed by this phenol derivative, relieves pain. The scab also splints the wound surface in such a manner that cell proliferation proceeds beneath it with a minimum waste of material. It is also said that trinitrophenol is strongly keratoplastic—that it promotes the formation of epidermis from the basal cell layers. It has indeed been said—with a certain degree of poetic license—that "with it one can create epidermis at will."

Unfortunately, trinitrophenol has its disadvantages. One of these is the intensely yellow stain it produces; the other, that it is toxic if improperly used. Cases of death from trinitrophenol poisoning are on record, when the chemical was used as an ingredient of a dust-

13. Meyer, A. W.: Ueber den Einfluss der Anästhesie auf den Verlauf von Entzündungen, besonders beim Erysipel, Ztschr. f. Chir. **47**: 974 (Aug. 7) 1920.
14. Northrup, Zae: The Effect of Concentrated Solutions of Certain Magnesium Salts on Pyogenic and Other Bacteria, J. Infect. Dis. **24**: 170 (Feb.) 1919.
15. Escher, T.: Zur Reform der Heilung per Secundam Intentionem, Zentralbl. f. Chir. **47**: 970 (Aug. 7) 1920.
16. Booth, C. C.: Paraffin Paper for Surgical Dressings, J. A. M. A. **71**: 59 (July 6) 1918.
17. Fisher, H. E.: Nonadhering Surgical Gauze, J. A. M. A. **66**: 939 (March 25) 1916.
18. Tidy, H. L.: Strength of Picric Acid as Antiseptic, Lancet, Sept. 11, 1915.
19. Ehrenfried, Albert: Picric Acid and Its Surgical Applications, J. A. M. A. **56**: 412 (Feb. 11) 1911.

ing powder, or when its aqueous solution was applied to a very extensive burn. In any case, the possibility of idiosyncrasy against the drug must be borne in mind; and, when headache, vertigo, nausea and vomiting or diarrhea develops, when a papular or erythematous rash appears, when yellow discoloration occurs in conjunctiva and skin, or when the urine becomes dark red, green or port-wine color and shows albumin, the dressing should be promptly removed. To avoid poisoning, third degree burns covering an extensive area should never be treated with trinitrophenol, nor should dusting powder, alcoholic solution or ointment be employed.

Ehrenfried [19] gives the details of the technic of this dressing. Water should be boiled in a flask sufficiently long to insure sterility of the water and of the inside of the flask. While it is still boiling, the estimated quantity of pure trinitrophenol crystals (12 Gm. to the liter) should be added to it, and it should be stopped with absorbent cotton and allowed to cool. Any excess of the acid will settle to the bottom of the flask. The contents will remain sterile indefinitely.

The solution should be applied on gauze.[20] In case of a superficial burn of the hand or foot, the part may be completely immersed in the solution for some minutes, and the gauze dressing then applied, covered with sheet wadding and bandaged. Waxed paper or other material to prevent evaporation and render the dressing occlusive is of no advantage, except to prevent the solution from soaking through and discoloring the bandage. To avoid staining the fingers, the wet gauze may be handled with forceps, or the hands may be protected by rubber gloves or petrolatum. Sometimes it is cleaner to apply the gauze to the part and then to moisten it by pouring the solution on the gauze directly from the bottle. To remove the stain, scrubbing with soap and water immediately after contact ordinarily suffices. Previous soaking in alcohol or ammonia water readily removes all except the faintest traces of yellow discoloration.

Before applying the trinitrophenol dressing to fresh burns of the first and second degree, or to superficial lacerated wounds, no preparation is necessary if the parts are tolerably clean. If the part is dirty, it should be gently washed clean with gauze sponges dipped in soap and water, and then rinsed off with sterile water or a weak antiseptic solution. Any blebs that have formed may be opened aseptically at their most dependent point and the contents expressed. One dressing usually suffices in these cases, unless the lesion is extensive. If a burn has received previous treatment with ointments or carron oil or other emergency application, this should be carefully wiped away, so as not to interfere with the action of the trinitrophenol.

In burns of the first and second degree and in other superficial lesions, the original dressing may be removed after three or four days; the wound will generally be found healed or covered by a flat pliant scab. If the gauze adheres to the scab it should be moistened with trinitrophenol solution to avoid pulling away the scab, which may then be softened with boric ointment and removed, or allowed to remain until it comes off, unless there is a suspicion that pus is imprisoned beneath. If there still remain unhealed portions, the dressing may be renewed or a paraffin film or cerate dressing (to be described later) applied.

(To be continued)

20. Picric acid impregnated gauze pads are obtainable on the market in sterile packets. They require merely moistening with water.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

SCARLET FEVER STREPTOCOCCUS ANTITOXIN

(See THE JOURNAL, May 2, 1925, p. 1338).

E. R. Squibb & Sons, New York.

Scarlet Fever Streptococcus Antitoxin Concentrated.—It is prepared by the method of Drs. Dick under U. S. patent 1,547,369 (July 28, 1925; expires, 1942) by license of the Scarlet Fever Committee, Inc. The serum is concentrated by the Banzhaf method. Each cubic centimeter neutralizes at least 25,000 skin test doses of scarlet fever toxin. Marketed in packages of one syringe containing 6 cc. (prophylactic dose) and in packages of one syringe containing 12 cc. (therapeutic dose).

SCARLET FEVER IMMUNITY TEST.—The toxin of the hemolytic streptococcus of scarlet fever is used to determine those persons who are susceptible to scarlet fever. The toxin is first carefully standardized on human beings and diluted so that 0.1 cc. represents a skin test dose.

The test dose is injected intracutaneously on the forearm and the degree of susceptibility is determined at the end of from twenty-two to twenty-four hours. An area of reddening 1 cm. or more in diameter constitutes some degree of a positive reaction, while a smaller area of reddening is considered negative. Reactions which have appeared but which have entirely faded at the end of twenty-four hours are regarded as negative. Positive reactions fade rapidly and have usually disappeared at the end of from forty-eight to seventy-two hours.

Scarlet fever streptococcus toxin diluted for use will retain its potency for at least two months at room temperature.

The toxin is used also for active immunization. For this purpose it is injected subcutaneously at weekly intervals. The amount of toxin necessary for immunity production varies with the individual. From three to five doses are given, beginning with 250 to 500 skin test doses for the first injection and increasing the amount of toxin in each subsequent injection. Immunity to the toxin appears in a few weeks and is determined by the reaction to the intracutaneous test.

E. R. Squibb & Sons, New York

Scarlet Fever Streptococcus Toxin for Dick Test-Squibb.—Prepared by the method of Drs. Dick under U. S. patent 1,547,369 (July 28, 1925; expires 1942) by license of the Scarlet Fever Committee, Inc. Marketed in packages of one vial containing sufficient toxin for ten tests; in packages of one vial containing sufficient toxin for 100 tests.

Scarlet Fever Streptococcus Toxin-Squibb.—Prepared by the method of Drs. Dick under U. S. patent 1,547,369 (July 28, 1925; expires 1942) by license of the Scarlet Fever Committee, Inc. Marketed in packages of five vials of toxin containing, respectively, 500, 1,500, 5,000, 15,000 and 20,000 skin test doses; in packages of fifty vials of toxin, ten containing 500 skin test doses, ten containing 1,500 skin test doses, ten containing 5,000 skin test doses, ten containing 15,000 skin test doses, and ten containing 20,000 skin test doses.

SULPHARSPHENAMINE (See New and Nonofficial Remedies, 1925, p. 55).

Sulpharsphenamine-Mallinckrodt.—A brand of sulpharsphenamine-N. N. R.

Manufactured by the Mallinckrodt Chemical Works, St. Louis, under U. S. patent 1,024,993 (April 30, 1912; expires 1929) by license from The Chemical Foundation, Inc.

Sulpharsphenamine-Mallinckrodt, 0.1 Gm. Ampules.
Sulpharsphenamine-Mallinckrodt, 0.2 Gm. Ampules.
Sulpharsphenamine-Mallinckrodt, 0.3 Gm. Ampules.
Sulpharsphenamine-Mallinckrodt, 0.4 Gm. Ampules.
Sulpharsphenamine-Mallinckrodt, 0.5 Gm. Ampules.
Sulpharsphenamine-Mallinckrodt, 0.6 Gm. Ampules.

Effect of Environmental Temperature on Organism.—During an exposure of six hours to an environmental temperature of 20 or 30 C. there was a drop in body temperature, probably due to a decrease in muscular activity. At 40 degrees there was an increase of one degree in body temperature without an initial drop. At 45 degrees and at 50 degrees the body temperature rose within an hour to such a height that it was deemed unsafe to continue the experiments.—Flinn, F. B.: *Pub. Health Rep.* **40**:888 (May 1) 1925.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, JANUARY 16, 1926

LABORATORY AID IN WHOOPING COUGH

So-called laboratory diagnosis has to some extent at least been recently subjected to extremely critical evaluation. One sometimes hears whispers of dissatisfaction with its accomplishments or the rumblings of opposition to its claims. We are reminded that the vaunted "laboratory aids" often do no more than furnish a verification of that which the well trained bedside clinician can discover through the peculiar technic or devices that are characteristically his own. Consequently the clinical chemist is now and then put into the position of a defender of his activities. It should be borne in mind, however, as Morse [1] has recently expressed it, that for him who aims to utilize chemistry in the study of the human being in health and in disease, chemistry is a means to an end and not an end in itself. Chemistry may become the tool for the investigation of the structure and functions of the body, just as physics affords the instrument by means of which the physiologist determines the flow of blood and the movement of the muscles.

A highly illustrative instance of the help that modern biochemical methods can afford is furnished by the recently reported observations of Powers [2] of the Yale School of Medicine on the convulsions that frequently complicate whooping cough in children. The symptoms have variously been ascribed to cerebral hemorrhage, encephalitis or other lesions, as well as to some vague "toxin." Opinion has differed as to whether the convulsions have an anatomic basis. It is true that a possible etiologic relation of tetany to them has also been proposed; but it remained for Powers to apply laboratory methods in securing the correct answer. His reports indicating the frequent occurrence of a lowered content of calcium in the blood and of an electrical hyperirritability of the nerves point to the identity of the convulsions with tetany. They also indicate the therapeutic procedures that are urgently called for in a complication of whooping cough that is always grave and often ends fatally.

Thus, Powers contends that the calcium concentration of the blood and that the electrical reactions of all infants with whooping cough should be determined, if possible, and therapeusis guided by the evidence for or against the existence of latent tetany. In the event that these determinations cannot be made, calcium chlorid should be administered to young children who have whooping cough complicated by convulsions, even if there is no clinical evidence of tetany and rickets; exception to this procedure might be made, of course, in those patients with proved cerebral lesions Furthermore, Powers adds, it would seem highly advisable, regardless of clinical signs or of laboratory data, to treat all infants suffering from whooping cough with cod liver oil or radiant energy or both. Even when uncomplicated, the infection is often severe, and the therapeutic measures just mentioned will not only prevent and cure rickets on which infantile tetany is usually, if not always, engrafted, but also promote general physical welfare more effectively than any so-called tonic remedies.

A few instances of such helpful aid furnished by specialized procedures in the direction of preventive therapy, as well as for curative purposes, suffice to offset myriads of objections to chemical laboratory diagnostic ventures.

1. Morse, W.: Applied Biochemistry, Philadelphia, W. B. Saunders Company, 1925.
2. Powers, G. F.: Tetany as a Cause of Convulsions in Whooping Cough, Am. J. Dis. Child. **30**: 632 (Nov.) 1925.

THE RÔLE OF INSULIN IN CARBOHYDRATE METABOLISM

Ever since the metabolic fate of carbohydrates in the body has become associated with the function of insulin, biochemists have been concerned with the question as to how the pancreatic hormone affects glucose so as to render it utilizable. Macleod [1] early realized that the very rapid fall in blood sugar that sets in almost immediately after injection of insulin suggests that some process occurring in the blood itself must be responsible for it—an increased glycolysis. There is widespread agreement among investigators, however, that insulin does not directly influence the rate of glycolysis or sugar decomposition.

A second explanation, which also was suggested early in the investigation of insulin, involves the possibility that it might have some influence on the properties of sugars so as to render them more labile in metabolism. The stereochemical character of glucose lends tenability to such an hypothesis. Several investigators, in fact, believed that they had demonstrated the occurrence in the body of varieties of glucose of varying stability; thus the discussions of the alpha, beta and gamma types of glucose were initiated. Differences were alleged to occur in the

1. Macleod, J. J. R.: Insulin, Physiol. Rev. **4**: 21 (Jan.) 1924.

blood of healthy and of diabetic persons. But the various claims that insulin does something to cause the conversion of a stable (oxidic) sugar to a labile (aldehydic) one were apparently invalidated.[2]

The idea that insulin, acting perhaps with some other agency in the tissues, may cause a change in the glucose molecule so as to render it more susceptible to oxidation has persisted despite the adverse reports. Lundsgaard and Holbøll[3] of the University of Copenhagen noted that a glucose solution with well defined optical properties always shows a lower rotatory power after the addition of insulin and fresh muscle tissue than that indicated by its reduction value.[4] The details of such studies are too complex to be reported here, but the report shows that under the conditions cited a transformation of part of the glucose into a new, heretofore unrecognized, form of glucose takes place.[5] The physiologic importance of this is emphasized by the further discovery[6] that the new glucose can always be detected in the blood of normal persons while fasting and also after taking glucose. The observations support the view that the new glucose is the first link in the chain of the transformation of glucose in normal carbohydrate metabolism. This conclusion was further supported by the fact[7] that, in patients with severe or moderately severe diabetes mellitus, new glucose could not be detected in the blood. This substance, however, was found in patients at the conclusion of the treatment. The presumably reactive sugar has also been demonstrated in spinal fluid, edema fluid and pleural fluid from patients with normal carbohydrate metabolism.[8] The Danish biochemists have accordingly set up a new hypothesis according to which insulin exerts its action in the organism in conjunction with a substance always or usually present in the muscles, by transforming α, β-glucose into new-glucose, which can then be further broken down in the organism. This theory, which presents some promising features, will require a careful investigation. Meanwhile we must bear in mind that a chain is no stronger than its weakest link. It remains to be seen whether the newest link will withstand the vigorous tests that it is sure to receive from critical students.

2. Winter, L. B., and Smith, W.: J. Physiol. **58**: 100, 1923. Hewitt, J. A., and Pryde, J.: Biochem. J. **14**: 395, 1920. Van Creveld, S.: Biochem. J. **17**: 860, 1923. Visscher, M. B.: Am. J. Physiol. **68**: 135, 1924. Denis, W., and Hume, H. V.: J. Biol. Chem. **60**: 603 (July) 1924; **59**: 457 (March) 1924.

3. Lundsgaard, C., and Holbøll, S. A.: Effect of Insulin and Muscle Tissue on Glucose in Vitro, J. Biol. Chem. **62**: 453 (Dec.) 1924.

4. As determined by its action on potassium ferric cyanid, according to the method of Hagedorn and Jensen: Biochem. Ztschr. **135**: 46, 1923; Chem. Zentralbl. **4**: 354, 1923.

5. Lundsgaard, C., and Holbøll, S. A.: Studies in Carbohydrate Metabolism, II, Investigations into the Mutarotation of β-Glucose under Various Conditions, J. Biol. Chem. **65**: 305 (Sept.) 1925.

6. Lundsgaard, C., and Holbøll, S. A.: Studies in Carbohydrate Metabolism, III, Investigations into the Nature of the Glucose in the Blood of Normal Individuals, J. Biol. Chem. **65**: 323 (Sept.) 1925.

7. Lundsgaard, C., and Holbøll, S. A.: Studies in Carbohydrate Metabolism, IV, Investigations into the Nature of the Glucose in the Blood of Patients with Diabetes Mellitus and of Patients with Benign Glycosuria, J. Biol. Chem. **65**: 343 (Sept.) 1925.

8. Lundsgaard, C., and Holbøll, S. A.: Studies in Carbohydrate Metabolism, V, Investigations into the Form of Glucose in Different Body Fluids, J. Biol. Chem. **65**: 363 (Sept.) 1925.

THE GLOMERULAR CIRCULATION OF THE KIDNEY

It is estimated that the human kidney contains two million glomeruli, or urine-forming units. For each of these there is a tubule. Richards[1] commented, in a lecture before the Harvey Society in 1921, on the tacit assumption in the great bulk of writing on kidney function that the circulation through all these units is at least roughly uniform, and that they take equal part in the sum of activities which make up the total function of the whole organ. He pointed out, on the other hand, that as early as 1859 Hermann noted that the two kidneys may eliminate different amounts of urine, and he stated that it was simplest to assume that not all parts of the kidney act to the same degree all the time, and that one part of the excreting surface may rest or be active, while another part is in reserve.

Such a conception has been made easier of acceptance through the recent observations on the functions of the capillaries in general. There is reason now to believe that their tone is not entirely dependent on blood pressure. The capillaries and venules can themselves respond to both chemical and nervous influences that mediate changes in their caliber. Peripheral vascular beds may thus be expanded or restricted in a most surprising manner. It is the merit of the Danish physiologist Krogh to have shown that in a muscle at rest many capillary channels are occluded, whereas during activity the number of potent capillaries is enormously increased.

Analogously, Richards and his co-workers[2] have found that instead of a uniform circulation of blood through all the glomeruli, varying with general and renal blood pressure, there may be a circulation restricted under conditions of moderate blood flow to only a fraction of the glomeruli. Thus not all of the latter receive blood, and therefore function, at any time. Under certain conditions the fraction of the total existing number of glomeruli taking part in the function of the whole kidney may vary within wide limits. These conditions relate to volume or composition of the blood or to the nervous control of the renal vessels, and they evidently can bring about extensive variations in the filtration surface of the secretory mechanism. By a beautiful technic these phenomena of varying "openness" of the glomeruli can be observed directly in the exposed kidney of certain species; in others, indirect microscopic procedures have furnished corroborative results. As a rule the number of open glomeruli, the kidney volume, renal blood flow, and urine elimination vary in the same direction. Caffein and salt solution, used as typical renal vasodilators, cause the number of open

1. Richards, A. N.: Kidney Function, Harvey Lectures, 1920-1921, Philadelphia, J. B. Lippincott Company, p. 177.

2. Richards, A. N., and Schmidt, C. F.: Am. J. Physiol. **71**: 178 (Dec.) 1924. Hayman, J. M., Jr., and Starr, I., Jr.: Experiments on the Glomerular Distribution of Blood in the Mammalian Kidney, J. Exper. Med. **42**: 641 (Nov.) 1925.

glomeruli to increase, while vasoconstricting agents tend to reduce the number of these urine-forming units open to the circulation. We are thus furnished with a new conception of how renal function is altered by changes in the extent of glomerular surface to which the blood has access. The successive obliteration and restitution of some of the glomerular filters exemplify in an unexpected way how the physiologic factors of safety, as Meltzer termed them, may operate in kidney function.

Current Comment

ANOTHER COLORED SLIP IN THIS ISSUE

The colored remittance slip inclosed in the issue of THE JOURNAL for December 12 met with a hearty response from Fellows and subscribers. Thousands of these slips have been returned to Association headquarters with payment for 1926 Fellowship and subscription dues—this, in spite of the fact that there may have been holiday distractions. For the convenience of those who have not yet remitted for their 1926 dues, slips are again inserted, in this issue. To place this slip only in the copies of those who have not paid would hopelessly complicate the mailing of the issue. Therefore, every copy carries the slip; those who have paid may disregard the slip. A 100 per cent response from the 90,000 Fellows and subscribers will save the Association thousands of dollars in postage and billing expense.

A SAVING WAGE FOR HEALTH OFFICERS

Some of the best work in medicine has been done by specialists in the public health field. The services have not, however, commanded salaries which would encourage high grade physicians and technical experts to remain long in them. If young men are to look on the public health service as a career, they must have confidence that old age will not find them indigent. Although a bill has been introduced to improve the condition of physicians in the Veterans' Bureau, at present, practically the best that the civil service has to offer is: "Positions of physician and medical examiner, for full-time duty: intern (junior medical officer register), $1,200 a year with quarters, subsistence and laundry. Associate medical officer, salary range $3,300 to $3,900, entrance salary $3,300. Medical officer, salary range $3,800 to $5,000, entrance salary $3,800. Senior medical officer, salary range $5,200 to $6,000, entrance salary, $5,200."[1] The average salary, of course, would be far below that offered in the senior grades. The present unsatisfactory state of the pay scale obtains not only in national but also in state and municipal positions; not only in the United States, but also in England. The article by Nicoll,[2] recently published in THE JOURNAL, has excited comment in an English periodical, "the *Medical Officer*, a Journal for Medical Men in the Government and Municipal Services."[3] Although gratified that Dr. Nicoll believes the United States has much to learn from England in regard to pay, tenure of office and dignity of the position of health officer, the British periodical shows the following unsatisfactory conditions in its home country: "For thirty-two highly qualified assistant medical officers, the average salary was £635 per annum, and this not for young practitioners, for seventeen of them had more than fifteen years' experience, and the average for the whole was ten years since qualifying. This is the case in what is by no means one of our worst paid health departments, and it is safe to say that we have in this country at least 1,500 whole-time health officers who are receiving not more than £600 per annum." The *Medical Officer* continues with remedial suggestions. First, support of the profession as a whole is necessary, backed, in England, by the Society of Medical Officers of Health and the British Medical Association; in the United States, by the American Public Health Association and the American Medical Association. Second, private practitioners should enter into the movement, for their own interest if for no other reason, because, as the author points out, "We are quite sure that the whole profession will suffer sooner or later if it is realized that the whole-time services of many hundreds of highly qualified and experienced practitioners are obtainable by the public at £600 per annum." The health officer should not be supported in luxury, as Dr. Nicoll says, but he should be able to maintain himself and family in reasonable comfort and to have something left for his dependents if illness or death should end his work.

DIPHTHERIA IN EUROPEAN CITIES

The special article on diphtheria death rates in large European cities, which is printed in another part of this issue,[4] emphasizes the great improvement that has taken place throughout the civilized world since the introduction of antitoxin treatment. At the same time it is evident that the decline has not been uniform in all countries. In the United States, diphtheria death rates in the years preceding the introduction of antitoxin were considerably higher than those in Great Britain for the corresponding period. A much larger proportional reduction in the diphtheria death rate seems to have occurred in the United States than in Great Britain in recent years. A comparison of Germany and Great Britain shows a similar relation: the 1924 rates were proportionately much lower in the German than in the British cities, while during the decade 1880-1890 the reverse was true. It is remarkable that three European cities—Southend, England; Toulouse, France, and Geneva, Switzerland—reported not a single death from diphtheria for the year 1924. Another point worth noting is that the

1. Announcement of United States Civil Service Examinations, as reprinted in Journal of Iowa State Medical Society **15**: 665 (Dec.) 1925.
2. Nicoll, Matthias: Some Problems in Public Health Administration, J. A. M. A. **85**: 1527 (Nov. 14) 1925.
3. Health Salaries at Home and Abroad, notes and comments, M. Officer **34**: 248 (Dec. 5) 1925.
4. Diphtheria in Certain Large Cities of Europe in 1924, this issue, p. 194.

Scottish cities Edinburgh, Dundee and Glasgow, which had relatively low rates from typhoid, had relatively high rates from diphtheria. This corresponds to the general prevalence of these two diseases in the United States.

Association News

ANNUAL CONGRESS ON MEDICAL EDUCATION, MEDICAL LICENSURE, PUBLIC HEALTH AND HOSPITALS

Preliminary Program of Meetings to Be Held in Chicago in February

The next Annual Congress on Medical Education, Medical Licensure, Public Health and Hospitals will be held in the Gold Room of the Congress Hotel, Chicago, February 15, 16, 17 and 18.

Council on Medical Education and Hospitals

On Monday and Tuesday, February 15 and 16, the Council on Medical Education and Hospitals of the American Medical Association will hold its twenty-first annual conference. The preliminary program is as follows:

MONDAY, FEBRUARY 15

Opening Remarks by the Chairman. Arthur Dean Bevan, M.D., professor of surgery, Rush Medical College, Chicago.

Cooperation in Educational Progress. Charles R. Mann, Ph.D., director, American Council on Education, Washington, D. C.

The University's Function in Medicine. Henry M. Tory, LL.D., president, University of Alberta, Edmonton, Alta.

The Program of Medical Education and Its Reactions. Albert B. Dinwiddie, LL.D., president, Tulane University, New Orleans.

Problems in Medical Education. A. Stanley Mackenzie, Ph.D., president, Dalhousie University, Halifax, N. S.

Experiments in Modifying the Medical Curriculum. Henry S. Houghton, M.D., director, Peking Union Medical College, Peking, China.

Hindrances to the University Action in Medical Education from the University Standpoint. Walter A. Jessup, Ph.D., president, State University of Iowa, Iowa City.

Discussion opened by Samuel P. Capen, LL.D., chancellor, University of Buffalo; David Kinley, Ph.D., president, University of Illinois, Urbana.

TUESDAY, FEBRUARY 16

Saving Time in Education.

(*a*) In High School and College. Charles H. Judd, Ph.D., professor and head of the department of education, University of Chicago.

(*b*) In the Medical School by Shorter Vacations, Quarter System, or Other Methods. Ray Lyman Wilbur, M.D., president, Stanford University, Stanford University, Calif.

Graduate Medical Education.

(*a*) The University Graduate Medical School and Medical Science. Guy Stanton Ford, Ph.D., dean, University of Minnesota Graduate School, Minneapolis.

(*b*) Postgraduate Assemblies. William B. Peck, M.D., secretary, Interstate Postgraduate Medical Association of North America, Freeport, Ill.

(*c*) University Extension Work. John Sundwall, M.D., head of the department of hygiene and public health, University of Michigan, Ann Arbor.

The Importance of Research in Educational Institutions. John M. Dodson, M.D., executive secretary, Bureau of Health and Public Instruction, American Medical Association, Chicago.

An Internship as a Part of Medical Education.

(*a*) Selection of a Hospital for Intern Training. Henry A. Christian, M.D., Hersey professor of the theory and practice of physic, Harvard Medical School, Boston.

(*b*) Purpose of the Hospital Internship. Ernest E. Irons, M.D., dean, Rush Medical College, Chicago.

Discussion by the chairmen of the fifth year committees.

Federation of State Medical Boards

Wednesday, February 17, the Federation of State Medical Boards of the United States will hold its annual session. The preliminary program is as follows:

WEDNESDAY, FEBRUARY 17

Ten Years of Examination Results. John S. Rodman, M.D., secretary, National Board of Medical Examiners, Philadelphia.

Admission of Foreign Medical Graduates to Licensure Examination. Guy L. Connor, M.D., secretary, Michigan Board of Registration in Medicine, Detroit.

State Board of Examiners in the Basic Sciences. Michael F. Guyer, Ph.D., secretary, Board of Examiners in the Basic Sciences, Madison, Wis.

The New Commission on Medical Education (Its Objects and Relation to Medical Licensure). Willard C. Rappleye, M.D., director of study, Commission on Medical Education, New Haven, Conn.

New State Board of Healing Arts of Connecticut. Robert L. Rowley, M.D., secretary, Medical Examining Board, Hartford, Conn.

Evidences of Impersonation and the Issuing of Fraudulent Diplomas. Frederick C. Waite, Ph.D., professor of histology, Western Reserve University School of Medicine, Cleveland.

Revocation of License. K. P. B. Bonner, M.D., secretary, North Carolina Board of Medical Examiners, Morehead City, N. C.

Annual Registration of Physicians. Don M. Griswold, M.D., commissioner of health of Iowa, Des Moines.

American Conference on Hospital Service

Thursday morning, February 18, the annual session of the American Conference on Hospital Service will be held. The preliminary program is as follows:

THURSDAY, FEBRUARY 18

Individual Versus Group Responsibility for the Care of the Hospital Patient.

(*a*) Henry A. Christian, M.D., Hersey professor of the Theory and Practice of Physic, Harvard Medical School; physician in chief, Peter Bent Brigham Hospital, Boston.

(*b*) Hugh Auchincloss, M.D., associate professor of surgery, Columbia University College of Physicians and Surgeons; visiting surgeon, Presbyterian Hospital, New York.

The Adaptation of Medical Education to Changing Clinical Practice.

(*a*) Louis B. Wilson, M.D., director, Mayo Foundation for Medical Research, Rochester, Minn.

(*b*) Allen O. Whipple, M.D., professor of surgery, Columbia University College of Physicians and Surgeons, New York.

Discussion opened by Willard C. Rappleye, M.D., director of study, Commission on Medical Education, New Haven, Conn. Christopher G. Parnall, medical director, Rochester General Hospital, Rochester, N. Y.

THE DALLAS SESSION

Local Committee of Arrangements

The Local Committee of Arrangements, its Advisory Council and the chairman of its subcommittees are: Local Committee of Arrangements: Edward H. Cary, Medical Arts Building, Dallas, chairman; W. W. Fowler, Dallas, secretary, and W. D. Jones, Dallas, treasurer.

Advisory Council: Charles M. Rosser, A. B. Small, John O. McReynolds, J. S. Calhoun, W. W. Samuell, F. A. Pierce, C. M. Grigsby and R. W. Baird, Dallas; William Keiller and J. E. Thompson, Galveston; M. L. Graves and R. W. Knox, Houston; J. H. Burleson and W. B. Russ, San Antonio, and Holman Taylor and I. C. Chase, Fort Worth.

The chairmen of subcommittees, all of whom reside in Dallas, are: Sections and Section Work, H. Leslie Moore; Registration, H. M. Doolittle; Technical Exhibits, R. B. Giles; Scientific Exhibit, George T. Caldwell; Entertainments, John H. Dean; Hotels, M. P. Stone; Printing, George L. Carlisle; Finance, A. I. Folsom; Diagnostic Clinic, J. M. Martin; Halls and Meeting Places, C. C. Nash; Reception, Elbert Dunlap; Alumni and Fraternal Entertainment, G. C. Kindley; Programs, Rice Jackson; Information, W. W. Shortal; Telegraph and Telephone, T. C. Gilbert; Badges, A. R. Thomasson; Women Physicians, Minnie L. Maffett; Golf, Leland Ellis; Local Transportation, W. Lee Hudson, and First Aid, M. E. Lott.

SCIENTIFIC EXHIBIT

Special Exhibits on Immunology and on Morbid Anatomy

The Committee on Scientific Exhibit of the Board of Trustees, on recommendation of its Advisory Committee, has authorized two special exhibits for the Dallas Session. The Exhibit on Immunology is being planned by Dr. H. Wahl, professor of pathology and acting dean of the Medical College, University of Kansas, and Dr. Ludvig Hektoen, director of the John McCormick Institute for Infectious Diseases. Dr. Wahl will have active charge of the exhibit and Dr. Hektoen will act in behalf of the Advisory Committee. Various individuals and organizations will also cooperate in supplying material; the United States Public Health Service is arranging for a coordinating exhibit on vaccination. The subjects

included in the Immunologic Exhibit will be Tuberculins, Vaccination, Dick and Schick reactions, Serums and Vaccines, Precipitin Reactions, Allergy, Natural Immunity, etc. Owing to the large scope of the subject, a two year program has been authorized, some subjects not mentioned here being deferred until next year's exhibit.

Another attractive feature will be the Morbid Anatomy Exhibit, under the direction of Dr. George T. Caldwell, professor of pathology of Baylor University Medical School. Fresh pathologic material will be shipped daily from the hospitals in the larger cities of Texas, supplemented by material from Dallas. It will be recalled that similar exhibits have been held at the two previous sessions and have created such interest that the subject seemed well worth presenting again, particularly as it will afford visiting physicians an opportunity to become acquainted with pathologic conditions encountered in Texas.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ARKANSAS

Society News.—Dr. Henry Thibault, Scott, will address the Pulaski County Medical Society at Little Rock, January 25, on "The Use of Intravenous Antiseptics in the Treatment of Septicemia."

Parking Ordinance Invalid.—The ordinance granting special parking privileges to physicians in Little Rock has been declared invalid by the circuit court in a decision in the case of a chiropractor who also claimed exemption, according to the *Pulaski County Medical Society Bulletin;* following his arrest and fine for parking overtime, the chiropractor appealed to a higher court, which held the ordinance invalid.

CALIFORNIA

Society News.—Dr. Leonard W. Ely, professor of orthopedic surgery, Stanford University Medical School, San Francisco, will address the Los Angeles County Medical Association, January 21, on "Bone and Joint Work at the Stanford Medical School."

Mrs. Fritz Fined.—Mrs. Rose Fritz, San Francisco, was fined $600, Nov. 17, 1925, by Judge Louderback for violating the state medical practice act, it is reported. More than a year ago, Mrs. Fritz is said to have been fined $500 for practicing medicine without a license, and later was acquitted on another similar charge.

Chinese Herbalist Jailed.—T. Wah Hing, a Chinese herbalist of Sacramento, was convicted by a jury, Nov. 10, 1925, of practicing medicine without a license, it is reported, and was sentenced to serve three months in the county jail and to pay a $600 fine. The evidence in the case was secured by representatives of the state board of medical examiners.

Proposed Rat-Proofing Ordinances.—The Building and Safety Commission of Los Angeles refused, Dec. 21, 1925, it is reported, to consider ordinances submitted by the health department for the rat-proofing of buildings, and called on the city council to divest the health department of authority to order alterations on buildings. Recently, the rodent-control authorities, under the direction of Dr. Rupert Blue, U. S. Public Health Service, submitted ordinances which would require that many buildings be rat-proofed by means of concrete foundations, which would have cost, it is said, more than $30,000,000; these proposals were withdrawn following a public hearing in council chambers, and a modified ordinance submitted. The Building and Safety Commission considers that the emergency that existed when building powers were conferred on the health department has passed.

CONNECTICUT

Superintendent Appointed.—Mr. Albert W. Buck has been appointed superintendent of the New Haven Hospital, New Haven, to succeed Dr. Willard C. Rappleye, who resigned to become secretary of the Commission on Medical Education, established under the auspices of the Association of American Medical Colleges. Mr. Buck was formerly connected with the New York Health Department and the American Red Cross, and in June, 1924, was appointed acting superintendent at Johns Hopkins Hospital, Baltimore.

GEORGIA

Impostor Imprisoned.—W. W. Baird, who, while posing as a physician at Cassville, is said to have robbed the bank of $1,100, pleaded guilty at Cartersville, recently, and was sentenced to serve from ten to fifteen years in prison; he is said to have begun serving the sentence, January 2. Baird came to the village of Cassville "seeking" a location to "practice," and obtained lodging at the home of the cashier of the bank. The funds and Baird are said to have disappeared simultaneously. He was located in Canada and returned to Cartersville for trial.

ILLINOIS

Chiropractor Fined.—H. E. Munkvold, Tuscola, a chiropractor, was fined $100 and costs in December, 1925, it is reported, for violation of the state medical practice act.

Personal.—Dr. Henry C. Mitchell, since 1910 chief surgeon of the St. Louis Division of the Illinois Central Railroad, retired from that position and from the practice of medicine, January 1.

Diphtheria Immunization at Nebo.—The superintendent of schools at the village of Nebo reported to the state department of health that 177 of the 192 pupils in that community have been immunized against diphtheria with toxin-antitoxin. This is the best record, the health department says, in the state in point of completeness.

Outbreaks of Smallpox.—Elgin reported an outbreak of twelve cases of smallpox last week, distributed throughout that city with many contacts; an equal number of cases was reported from Broadwell, Logan County, the previous week, which, with sporadic cases from other places, brings the total number reported for the first ten days of this year up to sixty, twice the number reported in the first ten days of last year.

Tuberculosis Sanatoriums.—There are thirty-one tuberculosis sanatoriums in the state, including some which will be opened within the next few weeks. Their combined capacity is 3,542 beds; fifteen of them are operated by counties, eight by municipalities and eight by private organization. Forty-eight counties collect taxes under the Galkin sanatorium law, but only fifteen have built sanatoriums. The gross annual cost of operating the thirty-one institutions is estimated by the state department of health at about $3,500,000.

Chicago

Dr. Wilbur Will Address Association of Commerce.—Dr. Ray Lyman Wilbur, president of Stanford University and formerly President of the American Medical Association, will address the Chicago Association of Commerce at a luncheon, February 17, at the Hotel La Salle on "Health, a Business Asset." Reservations for physicians should be made with the Chicago Medical Society, 25 East Washington Street. Tickets, $1 per person.

Pasteurizing Plants Closed.—In the campaign for pure milk for Chicago, the health commissioner, Dr. Herman N. Bundesen, closed two pasteurizing plants, January 9, which were alleged to be careless in pasteurizing milk; they were the Ogden Dairy Company, 4341 Ogden Avenue, and a plant owned by Stanley Ogurkiewicz, 119 East One Hundred and Twentieth Street. Policemen were stationed at the buildings to enforce the order until assurances are given that more care will be used; twenty-three farmers have also been barred from furnishing milk to Chicago. Dr. Bundesen's plan is to have all milk coming into the city after April 1 come from cows that are free from tuberculosis.

Society News.—Dr. William J. Mayo, Rochester, Minn., will address the Chicago Medical Society, January 20, at the Marshall Field annex building on "Surgery of Gallbladder Disease"; Dr. William H. Stewart, New York, on "Clinical Cholecystography," and Dr. Joseph L. Miller on "Medical Aspects of Gallbladder Disease."——The Chicago Tuberculosis Society met, January 14, at the Edward Hines, Jr., Hospital (Speedway), Roosevelt Road near Maywood. There was an inspection of the hospital beginning at 4:30; roentgen-ray demonstrations at 5:30, dinner at 6:15, and a symposium by the staff of the hospital at 7:30.——Dr. Henry K. Dunham, Cincinnati, will address the Chicago Roentgen Ray Society, January 21, at the Virginia Hotel on "X-Ray Plate as a Guide in the Treatment of Tuberculosis,"

and Dr. James S. Pritchard, Battle Creek, Mich., on "The Significance of Cough." Among others, Dr. James C. Sargent, Milwaukee, will report a case of "Congenital Bilateral Megalo-Ureteronephrosis Associated with Gaping Ureteral Orifices After Four Years of Permanent Suprapubic Drainage."

Liquor Licenses Revoked.—The prohibition administrator, Mr. E. C. Yellowley, announced, January 4, that the liquor licenses of the following physicians and druggists had been revoked:

PHYSICIANS

Dr. Horace B. Frost, 30 North Michigan Avenue.
Dr. William C. Spangenberg, 1032 Diversey Parkway.
Dr. Roy W. Klaus, 6975 Greenview Avenue.
Dr. Lester E. Garrison, 30 North Michigan Avenue.
Dr. Ethel B. Perry, 677½ Wrightwood Avenue.
Dr. Charles H. Long, 30 North Michigan Avenue.
Dr. Milton L. Smith, 17 North State Street.
Dr. Henry Steible, 6923 Wayne Avenue.
Dr. Cornelius A. Leenheer, 30 North Michigan Avenue.
Dr. Carl Ireneus, 30 North Michigan Avenue.

DRUGGISTS

Leroy S. Kusay, proprietor of the Casino Pharmacy, 933 Grace Street.
Charles Marshack, 1400 Blue Island Avenue.
Arthur H. Stephan Drug Company, 2754 North Clark Street.
Henry Maloney, 5400 South Halsted Street.
James A. O'Brien, 4658 South Ashland Avenue.
C. A. Graves, 300 South Cicero Avenue.

KENTUCKY

Illegal Practitioner Convicted.—Nicholas J. Goergen, a nongraduate and unlicensed practitioner of Newport, was recently convicted for violating the medical practice act, and was sentenced to pay a fine of $350 and to serve sixty days in jail. Goergen, according to the state board of health, which secured the conviction, represented himself as an roentgenray specialist, and in that capacity had seriously injured some patients.

LOUISIANA

Hospital News.—The Touro Infirmary, New Orleans, has established prenatal classes of instruction in the outpatient department.

Society News.—Dr. Walter B. Hunter, Coushatta, has been elected president of the Fourth District Medical Society.——Dr. Alfred P. Crain has been elected president of the Shreveport Medical Society.

Whisky Prescriptions Increase.—According to the *New Orleans Medical and Surgical Journal*, physicians of Louisiana wrote 194,786 whisky prescriptions in 1924, 158,685 in 1923, and 96,049 in 1922. The 1925 records apparently are not yet available.

MAINE

Personal.—Governor Brewster nominated Dr. Harrison J. Hunt, Bangor, medical examiner of Penobscot County, Dec. 3, 1925.

MARYLAND

Personal.—Drs. Charles A. Cahn and Nicholas W. Pinto have been appointed health officers in the Baltimore City Health Department by Commissioner Charles Hampson Jones. Dr. Pinto succeeds Dr. Joseph W. Martindale, resigned, and Dr. Cahn takes the place of Dr. John W. V. Clift, who has been transferred to another health district.

Society News.—At the meeting of the Baltimore City Medical Society, held at the Faculty Building, January 8, Dr. Theodore H. Morrison and Dr. Maurice Feldman gave an illustrated demonstration of visualization of the gallbladder by the oral method according to Graham's technic. Dr. Robert E. Fricke addressed the members on "Radiation Therapy of Carcinoma of the Cervix," which was illustrated.

Dr. Brouwer to Give Herter Lectures.—Dr. B. Brouwer, professor of neurology at the University of Amsterdam, Holland, has accepted an invitation to come to Johns Hopkins University, Baltimore, in April to deliver the annual lectures under the Herter lectureship fund. Dr. Brouwer will be the second European neurologist to lecture in Baltimore recently; Dr. Francis M. R. Walshe, neurologist of University College, London, spent some time at Johns Hopkins a few months ago.

New Outbreak of Measles.—A new outbreak of measles is reported by Dr. C. Hampson Jones, commissioner of health, Baltimore. Records of the department show that 479 cases were reported in six days. Dr. Jones explained the increase in cases reported as being due to parents permitting children who had measles to mingle with other children in order to avoid breaking up the holiday festivities; the most notable increase in cases began after the incubation period from Christmas.

Lectures on Public Sanitation.—The Baltimore City Health Department conducted a series of ten lectures ending Dec. 8, 1925, for the student nurses of the fifteen hospitals that have training schools in the city. The lectures were given in the health department assembly room and were to fulfil the requirements of the National League of Nursing Education, which is that all training schools include a series of public lectures on public sanitation given by persons experienced in public health work. The attendance at each lecture was more than 250.

The Rabies Situation.—More persons applied for the Pasteur treatment for rabies in Maryland during 1925 than in any previous year, according to Dr. Caleb W. G. Rohrer, chief, Pasteur division, state department of health; the number of persons requesting treatment was 688, whereas it was 226 in 1924; of the applicants, 600 were bitten by dogs. Treatment was administered by the state to sixty-six of these persons, and by private physicians to 113 others. The first patient treated this year in this division was bitten, January 2, and examination showed that the dog had rabies.

Equipment Bags for Midwives.—An obstetric bag containing the materials that midwives should use will be given to those who complete a course of instruction in the counties of Maryland given under the auspices of the state health department and the county board. All midwives in the counties mentioned are expected to attend classes, the purpose of which is to assist them to do good work, and to discourage those who are not conscientiously trying to do so. The courses of instruction include a series of eight lessons and demonstrations given by the county health officer, a deputy state health officer, or by a physician from the state bureau of child hygiene who has been specially trained. The classes now being held are in Allegany, Cecil, Howard, Kent, Queen Anne and Anne Arundel counties. There are more than 1,000 midwives practicing in Maryland.

MASSACHUSETTS

University News.—James A. Tobey of the Institute of Government Research, Washington, D. C., and formerly secretary of the National Health Council, lectured on "Public Health Law" at the Harvard University School of Public Health, January 5-7.

Personal.—The governor announced, Dec. 9, 1925, the resignation of Dr. Clarence I. Sparks, Easthampton, an associate medical examiner for fourteen years in the second Hampshire district.——Dr. Roy J. Ward has been reelected president of the Southern Worcester County Health Association.

Society News.—Dr. Edwin H. Place, Boston, clinical professor of pediatrics, Harvard Medical School, addressed the annual meeting of the Essex North District Medical Society, Lawrence, January 6, on "Modern Treatment of Scarlet Fever," and Dr. Robert L. DeNormandie, Boston, instructor in obstetrics, Harvard Medical School, on "The Four Common Causes of Maternal Mortality." Dr. James S. Stone, Boston, president of the Massachusetts Medical Society, also gave an address.——Dr. Walter B. Cannon addressed the Harvard Medical Society, January 12, at the Peter Bent Brigham Hospital, on "Some Recent Observations on Sympathetico-Adrenal Mechanisms."

MICHIGAN

Funds for Measles Epidemic.—The health commissioner of Detroit has requested an appropriation of $11,700, it is reported, to prevent the further spread of the measles in that city, which, in December, 1925, amounted to 940 cases; in the previous month there were 208 cases.

Personal.—Dr. John F. Gruber has been appointed health officer of the city of Cadillac to succeed Dr. David Ralston, who held that position for many years.——Dr. Harry F. Becker, South Haven, has been appointed medical director of the state public school at Coldwater.

Society News.—Professor Philip B. Hadley, Ph.D., of the University of Michigan, addressed the Kalamazoo Academy of Medicine, Dec. 15, 1925, on "The Bacteriophage of d'Herelle and Its Relation to Clinical Medicine."——Dr. Leonard G. Rowntree will address the Wayne County Medical Society, Detroit, January 18.

Fined for Not Reporting Births.—Dr. James H. Hudson, Merrill, recently pleaded guilty to a charge of failing to

report births under act no. 343, P. A. 1925, and was fined $20 and costs amounting to $20.50. The court allowed Dr. Hudson until January 7 to file all his unreported births, with the understanding that failure to do so would subject him to further prosecution.

Practical Examination Rescinded.—At the recent annual meeting of the Michigan State Board of Registration in Medicine, held at Lansing, the resolution adopted in 1923, authorizing a practical clinical examination for all medical graduates at the completion of the hospital intern year, was rescinded. It was decided that the plan was not practical at this time, that it would work a decided hardship on students, and that a very slight benefit was to be derived.

State Society Referendum.—The council of the Michigan State Medical Society has addressed a letter to every member of the society, requesting him to state what kind of program he desires for the 1926 annual meeting, and whether he prefers the meeting to be in the spring or fall of the year. The society departed from the usual custom of section meetings last year, and held four general clinical meetings. The council aims to provide a program that will appeal to the majority of members.

Detroit's Healthiest Year.—The department of health of Detroit announces that 1925 was Detroit's healthiest year, the death rate being 10.9, infant mortality rate, 78.8, birth rate, 26.1, and that there were no outbreaks of communicable disease except pneumonia, of which there were 30,597 cases. The death rate was the lowest the city has ever experienced, the next lowest being 11.0 in 1921; in 1900, the death rate was 16.3 and the infant mortality, 185.7. There were 328 persons in the city who lost their lives as a result of automobile accidents in 1925, the worst record in the history of the city, and larger by twenty-six than the number killed in 1924.

Postgraduate Conferences.—The state medical society held postgraduate conferences at Flint and Battle Creek, Dec. 9 and 16, 1925, the attendance being 102 and 121 physicians, respectively. Among others on the program at Flint were Dr. Clifford G. Grulee, Chicago, who spoke on "Hemorrhagic Diseases of the New Born"; Dr. George C. Hale, London, Ont., on "Nephritis from the Point of View of the General Practitioner"; Dr. Rupert S. Corbett, London, England, on "Clinical Types of Gallbladder Disease," and Dr. Cyrenus G. Darling, Ann Arbor, on "Acute Abdominal Conditions." At Battle Creek, Dr. Phil L. Marsh, Ann Arbor, spoke on "Pernicious Anemia" and "Hyperthyroidism"; Dr. Frederick C. Kidner, Detroit, on "Orthopedic Examinations and Corrective Measures" and on "The Management of Fractures," and Dr. George A. Kamperman, Detroit, on "Prenatal Care" and "Modern Obstetrics"; Dr. Thomas D. Gordon, Grand Rapids, on the "New Born," and Dr. Plinn F. Morse, Detroit, on "Diseases of the Liver." During the last year there were held twenty-four postgraduate conferences, with an attendance of 1,596 physicians, and in addition 6,400 high school students were addressed, 715 members of noonday luncheon clubs, and 3,000 laymen at public meetings. The state medical journal says that about 100 speakers from Michigan, Chicago, Wisconsin and Canada gave their time to make this work successful, and in only one instance during the year was a speaker absent, and that was unavoidable.

MINNESOTA

Personal.—Dr. Roscoe C. Webb, Minneapolis, has been elected chief surgeon of the Great Northern Railway to succeed Dr. Harry B. Zimmerman, resigned.

Model Health Ordinances.—The Minnesota State Board of Health and the Minnesota League of Municipalities propose to bring about the appointment of a higher grade of physicians as local health officers; they have also framed, says the *Journal-Lancet*, a set of model ordinances for villages and cities.

Society News.—Dr. Alex Dunlop, Crookston, has been elected president of the Red River Valley Medical Society. ——Dr. Franklin R. Wright addressed the Minnesota Academy of Medicine, Minneapolis, January 13, on "Suprapubic Cystotomy," and Dr. William F. Braasch on "Ureteral Obstruction."

MISSOURI

Chiropractor Fined.—William Duckworth, a chiropractor in St. Louis, was fined $50 and costs by Judge Gayer, January 4, it is reported, following a plea of guilty to a charge of practicing medicine without a license.

Court Sustains Revocation.—Judge Falkenhainer in circuit court, St. Louis, January 4, sustained the action of the state board of health in revoking the license of Dr. Frederic W. Brownfield, Crocker, and formerly of St. Louis, after having found him guilty of false statements concerning his attendance at medical schools. Dr. Brownfield appealed to the circuit court, contending that the board had admitted illegal and improper testimony at his trial.

MONTANA

Health Officer by Chance.—Dr. Charles Floyd Jump, Bozeman, has been appointed health officer of Gallatin County to succeed Dr. Joseph Piedalue. It is reported that when Dr. Jump's "bid" was found to be the same as that of Dr. Piedalue, health officer for 1925, the county commissioners tossed a coin. Dr. Jump has practiced for many years in Bozeman, where he is also city health officer.

NEW YORK

Personal.—Dr. Andrew W. Van Slyke, health officer of Coxsackie in Greene County, has held that position since the state board of health was organized in 1880; he is, therefore, according to the state health department, the dean of health officers in the state.——Dr. Marion E. K. Frisbie has been appointed chief physician to the State Reformatory for Women, Bedford, to succeed Dr. Alberta Greene, resigned. Dr. Frisbie comes from Norristown, Pa.

Award of Medal in Chemistry.—Samuel C. Lind, Ph.D., associate director, U. S. Fixed Nitrogen Research Laboratory, Washington, D. C., has been awarded the Nichols medal in chemistry for 1925 by the New York section of the American Chemical Society for work on "The Chemical Activation of Alpha Particles." Dr. Lind was formerly assistant in chemistry at the Massachusetts Institute of Technology, and assistant professor of general and physical chemistry at the University of Michigan, and in 1923 chief chemist of the U. S. Bureau of Mines. He originated the ionization theory of the chemical effects of radium rays.

Campaign to Eradicate Diphtheria.—The state health commissioner announced the opening of a campaign, January 1, to eradicate diphtheria from New York. The first step will be to convince parents, public officials and others of the desirability of protecting children under 10 years of age against diphtheria with toxin-antitoxin. The commissioner recommends that all local health officers lay out a definite program, secure appropriations necessary to immunize children to whom immunization would not be possible otherwise, and arouse interest and support to assist in promoting this movement. The state department of health furnishes standardized toxin-antitoxin mixture without charge to health officers, school physicians and private practitioners of medicine.

New York City

Personal.—Dr. Louis Carp has been elected president of the Metropolitan Medical Society.——Dr. William H. Pound has been made deputy health commissioner of New York.——Dr. Simon Flexner, director, Rockefeller Institute for Medical Research, has been elected an honorary member of the Société de pathologie exotique of Paris.

Society News.—At the annual meeting of the New York Academy of Medicine, January 7, Dr. Linsly R. Williams spoke on "The Future Work of the Academy"; Dr. Samuel W. Lambert, on "Academy Activities in Our Present Building," and Dr. D. Bryson Delavan, on "Early Days in the Academy."——Dr. William H. Park addressed the Flatbush Medical Society at the Cortelyou Club, Brooklyn, January 8, on "Scarlet Fever: Its Prevention, Control and Specific Treatment."

NORTH CAROLINA

Personal.—Dr. Alonzo H. Myers, Charlotte, has been placed in charge of the orthopedic clinics recently established by the state to care for indigent cripples at Fayetteville and Charlotte.——Dr. Everett F. Long, Raleigh, deputy state health officer, tendered his resignation to the state board of health, effective, Dec. 31, 1925, in order to engage in private practice.

Community Hospital Proposed.—A banquet was held at Burlington, Dec. 23, 1925, by prominent citizens of that city and Alamance County to consider the founding of a community hospital which would be enabled to receive aid from the Duke Endowment. Dr. Watson S. Rankin gave an address explaining the advantages of a community hospital and the extent to which the Duke Endowment would aid. A committee was appointed to work out plans for a hospital.

OHIO

Personal.—Dr. Herman H. Van Horn, Springfield, former instructor in Dartmouth Medical School, Dartmouth, N. H., has joined the staff of Wittenberg College, Wittenberg; he will teach embryology.——Dr. Willis B. Merrill, Columbus, has been appointed chief physician at the Ohio State Penitentiary, to succeed Dr. C. Larimore Perry, resigned.——Dr. John C. Stratton has been elected a member of the board of education of Middletown.——Dr. Oliver R. Eylar has been reelected health commissioner for Pike County for a term of two years.——Dr. Joseph S. Rardin, Portsmouth, has been elected chief of the staff of the Portsmouth General Hospital.

Society News.—Dr. Joseph C. Aub, assistant professor of medicine, Harvard University Medical School, Boston, addressed the Cincinnati Academy of Medicine, January 4, at the University of Cincinnati College of Medicine, on "Lead Poisoning."——Dr. Oliver P. Kimball, Dayton, addressed the Preble County Medical Society, recently, at Eaton, on "Diagnosis, Prevention and Treatment of Goiter."——Dr. Henson M. Hazelton, Lancaster, addressed the Athens County Medical Society, Dec. 1, 1925, at Nelsonville on "Advantages of the American Medical Association."——Dr. Lewellys F. Barker, emeritus professor of medicine, Johns Hopkins University, Baltimore, addressed the Columbus Academy of Medicine, Dec. 14, 1925, on "Life and Health."——Dr. Theodore F. Myler has been reappointed health commissioner of Washington Court House.——Dr. Karl D. Figley, Toledo, addressed the Putnam County Medical Society, January 7, on "Periodic Health Examinations."——Dr. Lewis F. Smead addressed the Wood County Medical Society, Bowling Green, Dec. 17, 1925, on "Diagnosis of Acute Conditions in the Lower Abdomen."

Hospital News.—At a meeting of the public health federation, Cincinnati, Dec. 17, 1925, the newly elected president, Dr. Thomas A. Ratliff, announced that a $250,000 building to house feebleminded persons would be constructed in Hamilton County in the near future, and that this sum had already been allotted to the state welfare department by the state. Dr. Martin H. Fischer, professor of physiology, University of Cincinnati College of Medicine, addressed the meeting on "Public Interest in Scientific Methods in Medicine."——The new Allen Hospital, erected for the citizens and students of Oberlin, was dedicated the second week in November, 1925. ——Dr. Emil Novak, Johns Hopkins Medical School, Baltimore, recently addressed the staff of the City Hospital, Massillon.——Ceremonies were held, Dec. 30, 1925, to lay the cornerstone of the new Children's Hospital, Cincinnati, which will be affiliated with the College of Medicine of the University of Cincinnati and the Cincinnati General Hospital. When completed in the spring, it will have thirty private rooms and four wards of twenty-eight beds each. The staff will be selected largely from the faculty of the University of Cincinnati College of Medicine.

PENNSYLVANIA

Personal.—Dr. Samuel J. Dickey, Grove City, has been appointed full-time county health officer of Mercer County. ——Dr. Carey J. Vaux has been reappointed director of public health of the city of Pittsburgh.

Health Council Formed.—To coordinate the health work of the city of Harrisburg and bring into closer cooperation the various health agencies, a health campaign has been formed. Each member agency is entitled to three delegates, and meetings will be held bimonthly. The council is governed by an executive committee on which is, among others, Dr. Clarence R. Phillips, president, Dauphin County Tuberculosis Society. One of its first objectives will be to secure a hospital for contagious diseases.

State Convalescent Hospital.—The secretary of health, Dr. Charles H. Miner, announced, January 8, that the new state hospital for crippled children will be constructed as soon as possible near Elizabethtown. The last legislature appropriated $250,000 for the hospital, which will be in the nature of a convalescent hospital for juvenile patients from various operative hospitals. Especial attention will be given to rehabilitation. There are, it is said, about 25,000 crippled children in the state who need free hospital service. The hospital will care for from 600 to 800 children.

Philadelphia

Society News.—Dr. Henry Dintenfass addressed the Philadelphia Laryngological Society, January 5, on "The Gradenigo Syndrome, with Report of a Case."——Dr. Francis Peyton Rous of the Rockefeller Institute for Medical Research addressed the College of Physicians, Philadelphia, January 6, on "The Phenomena of Biliary Obstruction," and Dr. Arthur D. Hirschfelder of the University of Minnesota, on "The Laboratory Point of View in Clinical Medicine."——Dr. Earl D. Bond addressed the Philadelphia Psychiatric Society, January 8, on "Postencephalitic Behavior in a Group of Boys." ——Dr. William R. P. Emerson, professor of pediatrics, Tufts College Medical School, Boston, addressed the Philadelphia Pediatric Society at the annual meeting, January 12, on "Nutrition and Growth in Children."

RHODE ISLAND

Hospital News.—Samuel G. Ascher, Hartford, has been appointed superintendent of the Miriam Hospital on Parade Street, Providence.

Eleven Deaths from Measles.—The epidemic of measles that is said to have existed in Providence since last fall amounted to about 1,200 cases and eleven deaths, January 1, when there were about 500 cases in the city; three years ago, Providence had an epidemic of measles amounting to about 4,500 cases.

SOUTH DAKOTA

Personal.—Dr. Albert E. Campbell, city health officer of Sioux Falls since last May, has resigned.

Society News.—Dr. Hugh T. Jones, Mayo Clinic, Rochester, Minn., addressed the Sioux Falls District Medical Society recently on "Office Orthopedics." Dr. William P. Roberts, Sioux Falls, was elected president of the society; Dr. Leroy L. Park, Canton, vice president, and Dr. David A. Gregory, Sioux Falls, secretary-treasurer.

TEXAS

Society News.—Dr. Edward Jackson, Denver, addressed a special meeting of the Maricopa County Medical Society recently on "Cancer."——Dr. Robert Y. Lacy, Pittsburgh, was elected president of the Northeast Texas Medical Society at the recent meeting at Mount Pleasant, and Dr. John M. Ellis, Mount Pleasant, secretary-treasurer. The next meeting will be in Texarkana, the second Tuesday in April.

WISCONSIN

Society News.—Dr. Edward C. Rosenow, Rochester, Minn., addressed the medical society of Milwaukee County, January 8, on "Poliomyelitis."

Personal.—Dr. Karl Schlaepfer, instructor in pathology, Yale University School of Medicine, New Haven, Conn., has resigned to enter private practice in Milwaukee.

Dr. Hager Resigns.—Dr. Benjamin H. Hager, who has been associate professor of surgery and head of the department of urology at the University of Wisconsin Medical School, Madison, since the new Wisconsin State General Hospital was established, has resigned to become a member of the permanent staff in urology at the Mayo Clinic, Rochester, Minn.

GENERAL

Appointments of Former Fellows of Research Council.—Dr. Paul B. MacCready has been appointed clinical instructor of surgery at Yale University Medical School, New Haven, Conn.; Dr. Lloyd H. Newman, assistant professor of biochemistry at Howard University School of Medicine, Washington, D. C., and Carl I. Reed, Ph.D., associate professor of physiology, Baylor University College of Medicine, Dallas, Texas. These appointees formerly were fellows in medicine of the National Research Council.

Films for Medical Societies and Schools.—The U. S. Public Health Service has released strip film views, illustrating lesions of syphilis and of skin diseases simulating syphilis, prepared with the assistance of eminent syphilogists and dermatologists. The Surgeon General has planned for the use of this film by medical societies, medical schools and hospitals through the various state boards of health. A number of copies of each film are being made, and while they are not for sale, they will be released to the state boards of health for extended periods.

Information Wanted About a Physician.—Information is desired concerning the whereabouts of Dr. Isidor Ritter, formerly of New York City. Dr. Ritter disappeared "as though the earth swallowed him" in 1907. He was last seen in Rochester; he is about thirty-eight years of age, 5 feet 9 inches tall, of light complexion, with a tattoo mark on his arm and a light area, the size of a nickel, on the back

of his head. Dr. Ritter has relatives in New York, Atlantic City and Philadelphia. Information should be forwarded to Dr. Henry Reiter, 211 East Tenth Street, New York, who requests that medical journals here and abroad publish a notice.

Federal Aid for States for Narcotic Control.—A bill to bring about cooperation among the states and the federal government in the prevention and control of drug addiction has been introduced by Senator Samuel Shortridge of California. The measure provides that the treasury department shall make studies, investigations and reports regarding the prevention and control of drug addiction and the treatment of drug addicts. The bill apportions $10,000 to each state of the Union, provided such state shall "create a state agency with which the secretary of the treasury shall have the necessary powers to cooperate in the administration of the provisions of the act." The bill follows the usual text of legislation giving federal aid to states on matters which are administered generally by state and federal authorities.

The Leslie Dana Medal.—On retiring as chairman of the Missouri Commission of the Blind, in 1925, Mr. Leslie Dana established a fund to be used by the Missouri State Association for the Blind for the annual purchase of the Leslie Dana Medal for the Prevention of Blindness. The National Committee for the Prevention of Blindness makes the annual award of the medal; nominations will be received with detailed information until March 15. The award will be made under the following conditions: (1) long meritorious service for the conservation of vision in the prevention and cure of diseases dangerous to eyesight; (2) research and instruction in ophthalmology and allied subjects; (3) social service for the control of eye diseases; (4) special discoveries in the domain of general science or medicine of importance in conservation of vision. Nominations for the award should be made to the National Committee for the Prevention of Blindness, 370 Seventh Avenue, New York.

Meat Inspection and Public Health.—During the last fiscal year, federal meat inspectors in more than 800 packing establishments in which federal inspectors are maintained condemned about 300,000,000 pounds of meat, according to the U. S. Department of Agriculture; nevertheless, the vast majority of the animals inspected by the government were healthy. The inspection begins when animals are received alive for slaughter; it includes a thorough antemortem and postmortem examination, then a rigid inspection of smoked and cured meats, and a final inspection when these products leave the packing houses. The inspection is done by veterinarians who must be graduates of a four year course in an accredited veterinary college, and who must then pass a civil service examination and, in addition, receive special training. Federal meat inspection applies only to products handled by establishments which do interstate or foreign business; federal inspected products can be identified by the inspection stamp on fresh meat, and by labels on canned goods. Slaughterhouses whose business is conducted within the state in which it is located are not, therefore, subjected to federal inspection. This class of products, however, constitutes only about a third of the total meat products produced.

Protest Reduction of Tax on Alcohol.—Wholesale druggists and manufacturing chemists are sending protests to the Finance Committee of the Senate against the reduction of the tax on pure alcohol as passed by the House of Representatives. The tax reduction bill reduces the tax 55 cents per gallon, Jan. 1, 1927, and provides for an additional 55 cents reduction effective, Jan. 1, 1928. The effect of this reduction would be to cut the present federal tax on alcohol 50 per cent by Jan. 1, 1928. Wholesale druggists state that the present tax is a safeguard against the diversion of pure alcohol for illegitimate purposes, and that with pure alcohol obtainable at a price about equal to the cost of tax free denatured alcohol, those who now divert tax free alcohol for manufacturing purposes would at once attempt to obtain pure denatured alcohol by operating under the guise of pharmaceutic manufacturers. They state also that the manufacture of alcoholic medicines by the unskilled would flood the country with low quality and untested products which would be a menace to public health. Senator Smoot, chairman of the Finance Committee, has conferred with officials in the treasury department on the advisability of keeping the present tax on alcohol.

Endowment for Research in Pure Science.—The National Academy of Sciences announced, January 6, its appeal to a body of prominent public men to join with leading scientists to secure larger resources for research in pure science; it hopes to obtain an income of at least $2,000,000 a year to establish national research professorships and to cooperate in other ways with institutions in this country in the biologic, physical and mathematical sciences. The academy has created a special board of trustees for these funds, including Albert A. Michelson, president, National Academy of Sciences and Nobel Prize winner, Andrew W. Mellon, Charles E. Hughes, Edward M. House, Julius Rosenwald, Cameron Forbes, Felix Warburg, Robert A. Millikan, Owen D. Young, Dr. William H. Welch, Dr. Simon Flexner, Dr. Joseph H. Breasted and others. The announcement states that there is not the slightest conflict between the purposes of the National Academy of Sciences and those of the Smithsonian Institution, which is also now seeking a large endowment. It is pointed out that the United States is leading all nations in industrial research, but is far behind in pure science research.

Bequests and Donations.—The following bequests and donations have been announced recently:

The Children's Hospital, Birmingham, Ala., $5,000; the New York Association for the Blind, $25,000, and the New York Entomological Society, $10,000, by the will of the late Lewis B. Woodruff.

St. Catherine's Hospital and the Brooklyn Home for the Blind and Crippled Children, each $1,000, by the will of the late Magdalena Lett.

The Home for Incurables, Philadelphia, $7,500, for a free bed in the children's department as a memorial to her daughter, by the will of the late Helen N. Cresswell.

The Cook County Hospital, Chicago, $2,100, by the late Abesido Shbaby, a former patient.

Mount Sinai Hospital, New York, $5,000; Montefiore Home and the Hebrew Orphan Asylum, each $1,000, by the will of the late Morris Bondy.

St. Andrew's Convalescent Hospital, New York, $2,500, by the will of the late George V. Foster.

The St. Barnabas Hospital, Newark, N. J., $20,0000, to endow a room to be known as "Sardel Spencer Holbrook Room," and $5,000 each to the Home for Crippled Children, Newark, the Association to Provide and Maintain a Home for the Friendless, and the Newark Bureau of Associated Charities, by the will of the late Alexander P. Holbrook, Newark.

To the Galludet Home for the Aged and Infirm Deaf Mutes, Wappingers Falls, $15,000, by the will of the late John B. Howard, West Orange, N. Y.

Jefferson Medical College, $5,000 from Samuel Bell, Jr., and the same amount from John C. Martin for the fund for the new hospital annex, which now amounts to $782,000.

The Home for Blind Children and the Catholic Sisters' Nursing Home, New York, each $500, by the will of Mary Golden.

The Home for Aged of the Little Sisters of the Poor, New York, $250, by the will of the late John R. McDonald.

The New York Academy of Medicine, $5,000, by the will of the late Edward B. Bronson.

The Highland Park Hospital, Highland Park, Ill., $100,000, by the will of Mrs. Edith McGregor Adams.

The Grenfell Endowment Fund, $3,000; the Home for Crippled Children, Newark, N. J., $1,000, by the will of Annie R. Miller.

The Methodist Episcopal Home for the Aged, the German Evangelical Home for the Aged and the Wartburg Home for the Aged, Brooklyn, each $1,000, by the will of Isaac Bernkopf.

Mount Sinai Hospital, New York, the Montefiore Home, the United Hebrew Charities, the Hebrew Orphan Asylum and the Home for Aged and Infirm Hebrews, each $5,000; the Hebrew Infant Asylum and the Crippled Children's East Side Free School, each $2,500, by the will of the late Harriet Weil.

The Society of the United Hebrew Charities and the Jewish Hospital, Philadelphia, each $1,000, by the will of the late William J. Ostheimer.

Excerpts from Surgeon General's Report.—For almost the first time in the history of United States' quarantine, there was no detention of ship's passengers or crews on account of yellow fever in the year ending June 30, 1925, says Surgeon General Cumming, in his annual report of the public health service to the Secretary of the Treasury. The most important event in international health relations during the fiscal year, it is said, was the signing of the Pan-American Sanitary Code by eighteen American republics at Havana, Nov. 14, 1924; as yet the code has been ratified by the United States, Cuba, Chile, Peru and Costa Rica; its acceptance by the other countries is expected in the near future. India reported more than 276,000 deaths from cholera during the calendar year 1924, nearly four times the number reported in 1923. Incomplete reports from sixty-two countries included more than 50,000 deaths from smallpox during the calendar year 1924. The same countries, during 1923, reported more than 45,000 deaths from smallpox. Reports of plague received from forty-nine countries for the year 1924 included more than 400,000 deaths in Asia. Attention is called to the increasing number of deaths from automobiles, the rate having increased from less than 1 per hundred thousand in 1906 to nearly 15 in 1923. Reports from thirty-six states show that 111 persons were killed and 1,030 were injured by fireworks in celebrating July 4, 1925. Heart disease ranks first as a cause of death in the United States, and influenza and pneumonia combined are second. There are two types of Malta fever in this country, one which is responsible for considerable losses in cattle, but apparently not readily transmitted to man, and another type which is readily transmissible to man through goat's milk. In addition to many investigations conducted by the public health service, it continues to supply medical attendance to various commissions, bureaus, boards, services

and units for the government; the number of merchant seamen, the principal beneficiaries treated, exceeded the number in any previous year, as did the total amount of all relief furnished; it cost the public health service $3.80 a day to care for each patient in hospital, whereas, in 1923 it cost $4.08 a day.

LATIN AMERICA

First Argentine Surgical Congress.—The Argentine Medical Association is organizing the first national surgical congress, to convene at Buenos Aires in August, 1926. Dr. D. J. Cranwell is chairman of the committee in charge.

Society Election.—At the annual meeting of the Medical Association of Porto Rico, San Juan, Dec. 20, 1925, Dr. E. Fernandez Garcia, San Juan, was elected president; Dr. Agustin R. Laugier, San Juan, vice president; Dr. Ramon M. Suarez, Santurce, secretary, and Dr. M. Pavia Fernandez, San Juan, treasurer.

Prize Offered Cuban Profession.—Our Cuban exchanges mention that the president of the organized manufacturers of surgical instruments in France will donate a urologic instrument to be awarded, after competition, to some young Cuban physician. The prize is to be known as the Joaquín Albarrán prize. The committee of award includes the president of the Havana Academy of Sciences, the dean of the medical faculty, two professors of urology, and some representatives of the Albarrán Association in France.

Personal.—Dr. Armando Pareja Coronel has been appointed governor of the province of Guayaquil.——Dr. F. M. Fernández, Havana, was the guest of honor at a banquet given by the Paris-Latin America Association at Paris, recently. He is professor of ophthalmology, editor of the *Crónica Médico-Quirúrgica*, and presided at the last Cuban medical congress. ——Dr. Jayme Pereira has returned to Rio de Janeiro after two years of graduate study of physiology at Harvard and Woods Hole, on a Rockefeller fellowship, with one year in the laboratories of Europe.—Dr. Lucio Córdoba has been appointed chief of the public health service in Chile—a cabinet post in Chile.——It is said that Dr. Voronoff is expected to arrive soon at Santiago to lecture on "Rejuvenation."——A banquet was tendered Drs. J. Dellepiane Rawson and Julio Diez at Buenos Aires on their departure for Europe. The former won by competition a fellowship at the Rizzoli Institute at Bologna.——Dr. F. R. Torres was elected president of the newly founded Sociedad de Tisiología at Córdoba and Dr. A. Lorusso editor of the organ of the society.—— Dr. P. Ara, professor of anatomy, Córdoba, was the guest of honor at a farewell banquet at Buenos Aires as he left for a trip to medical centers in other countries.——The medical faculty of the University of Lima has conferred an honorary degree on Dr. Albert L. Barton.

FOREIGN

Measles in London.—There have been 115 deaths from measles in London in the last four weeks, according to the New York *Times*, and 221 deaths during that period in seventy cities of the United Kingdom.

The Devoto International Prize.—Prof. L. Devoto recently completed twenty-five years of medical teaching at Milan, and a gold medal was presented to him. He is the founder and director of the clinic for occupational affections, opened in 1910. A fund has been collected to found an international prize in his name, to be awarded biennially for the publication that has contributed most to the pathology of occupational disease. The Milan Academy of Sciences will award the prize. The monthly issued by the Clinica de Lavoro, Via S. Barnaba 8, Milan, is called the *Medicina de lavoro;* the editor is Prof. L. Preti.

Memorials to Physicians.—The town of Cesena in Italy recently organized a celebration in honor of the pathologist Dr. M. Bufalini, who was born there in 1787.——Switzerland has also been celebrating the centennial of the birth of Dr. Laurenz Sonderegger, one of the pioneers in preventive medicine with word, pen and deed.——As a feature of the recent centennial of the Oporto Medical School (Portugal), the faculty appealed to the local authorities of certain towns asking them to rename streets in honor of the more prominent physicians connected with the school in the last century, when they had been born or lived long on the street.

Interchange of Medical Officers.—Under the auspices of the League of Nations, the Interchange of Medical Officers of Health was held in Tokyo, Japan, from Oct. 18 to Nov. 19, 1925. The delegates made a four weeks' tour of inspection of hospitals, quarantine stations, laboratories and institutes in Japan, and then met in Tokyo for scientific discussions. Among the countries represented were Australia, China, India, Dutch East Indies, the Straits Settlements and Japan; besides the delegates, Dr. L. Rajchman, director of the health section of the League of Nations, Dr. H. Wilson, secretary of the foreign section, and many other prominent Japanese scientists were present. Similar conferences were held in Seoul and Mukden, after the party made a two weeks tour of inspection of the cities and towns in those regions; the conference formally closed, Dec. 4, 1925.

Personal.—The seventy-fifth birthday of Dr. P. G. Unna, professor of dermatology, Hamburg, was celebrated recently, the festivities concluding the next day with a concert, Dr. Unna playing the 'cello in the Schubert C major quintet.——Dr. Vermeulen, Nieuwegracht 165, Utrecht, is the secretary in charge of the Esveld prize of a gold medal and 300 gulden to be awarded for the best study of the vaginal mucosa in domestic animals during the sexual cycle.——Dr. I. Hertzberger is in charge of the newly inaugurated institution at Hilversum, Netherlands, for feebleminded Jewish children. It is to have accommodations for fifty.——Prof. Armand-Delille presided at the recent unveiling of a portrait tablet as a memorial to Grancher, at Cambo, where Professor Grancher was long mayor. The occasion was utilized for the foundation of a branch in southwestern France of the Grancher system of family placement of children to escape tuberculosis in the environment. ——Dr. V. Schilling, Sächsische Strasse 8, Berlin, is compiling data on the prevalence of pernicious anemia, as there is an impression of increasing incidence.——A gold medal with album of signatures was presented recently to Prof. F. Neri, Bari, by his friends throughout the region.——A gold medal and pension were recently conferred by the authorities and the citizens on Dr. G. B. Botto, who has been health officer *(medico condotto)* in Novara, Italy, for fifty-two years.

Berlin Faculty Decides Against Official Welcome to American Physicians.—The dean of the medical faculty in a letter to the *Deutsche medizinische Wochenschrift*, Dec. 11, 1925, explains that the medical faculty would be glad to greet the Interstate Post-Graduate Association of North America but is not in a position to do so as long as German physicians and German are excluded from international medical congresses, or until members of the organization sign a document denouncing the resolution to that effect adopted in 1920, and agree to use their influence to have that resolution rescinded. The Berlin faculty adopted this decision, May 19, 1925, and the Interstate Post-Graduate Association officials were notified; notwithstanding, a party of eleven members announced their approaching arrival, July 12, and forty from Paris, July 26. Each party was sent a copy of the letter that had been sent to the Post-Graduate Association, and was notified that the Berlin faculty could receive their visit only when the members had previously signed the required written explanation. No reply was received from the Paris group; the other group wrote that they would recommend the communication for consideration, notwithstanding that they had not seen the clinics and institutes of Berlin. The *Wochenschrift* extols this action of the medical faculty, and urges other faculties to join with the Berlin medical faculty instead of submitting tamely to this "boycott of German medicine, dictated by competitors' envy and a frenzy of revenge" (. . . *von Konkurrenzneid und Rachsucht diktierten Boykott*).

Work of International Health Board of the League of Nations.—At the fifth session of the board, in October, different members of the board were directed to prepare preliminary reports on the frequency of trachoma and the means to control it adopted in other countries; control of the manufacture and sale of articles of food; infant mortality, and the necessity for establishing a center for epidemiologic data on the west coast of Africa. Dr. L. Bernard, who has recently returned from South America, urged the rapid transmission to Brazil of data from the epidemiologic center at Singapore, as an aid in handling Japanese immigration. The malaria commission presented its report on eastern Europe and the basin of the Mediterranean, but urged more study of malaria in Sicily, and of certain other questions which will require investigation in the Southern states of the United States as to what has been accomplished in the fight against mosquito larvae, and by Bass with quinine prophylaxis. The commission urged further study of the deltas of Europe, the Danube, Po, and other rivers, and their connection with malaria; rice fields in Europe; the rôle of domestic and other animals; what has been accomplished by sanitation; the value of the secondary alkaloids of quinine, etc. Dr. Chagas was commissioned to prepare a report on leprosy in Brazil, and Drs. Pittaluga and Raynaud, on leishmaniasis in the Mediter-

ranean basin. Others were commissioned to report on the new immunologic methods of treating measles and scarlet fever, and the value of convalescents' serum. According to the report in the *Gazette des hôpitaux*, Dr. Alice Hamilton, of the Harvard medical faculty, was the only member of the board from the United States.

Deaths in Other Countries

Dr. **C. du Bois-Reymond,** Berlin, professor of ophthalmology, aged 70. He served for a number of years in the German Medical School at Shanghai.——Dr. **B. von Tobold,** Berlin, of the medical general staff, whose booklet on "Hygiene for the Soldier" had passed through fifty-three editions by 1922.——Dr. **S. Politzer,** Vienna, director of the Hütteldorff Convelescent Home.

Government Services

Appointment to Medical Council

Dr. Frank B. Granger, Boston, was elected to membership in the U. S. Veterans' Bureau Medical Council at the recent fourth conference to succeed Dr. Thomas W. Salmon, who resigned on account of pressure of other work which prevented his participation in its activities. Dr. Granger is president of the American College of Physiotherapy and instructor in the Harvard University Graduate School of Medicine, and neurologist to the Boston Dispensary; he was director of the department of physiotherapy in the Surgeon General's Office during the World War.

Bill to Fix Salaries in Veterans' Bureau

Provision to fix the pay and allowances of physicians in the Veterans' Bureau, on a basis equivalent to that of the medical officers of the army, is made in House bill 5975, introduced by Congressman Connery of Massachusetts. Under this bill, senior medical officers of the bureau would receive the pay and allowances of colonel; medical officers, that of major; first assistant medical officers, that of captain, and second assistant medical officers, that of first lieutenant. The pay and allowances of nurses in the Veterans' Bureau would be the same as that of nurses in corresponding grades of the Army Nurses Corps. In computing longevity pay, there would be credited to physicians and nurses all service rendered as medical officers or nurses in the Veterans' Bureau Medical Service. The effect of this legislation would be to bring material increases in salary to all physicians in the Veterans' Bureau, place them on a permanent basis, and increase the efficiency of the medical organization of the bureau. Director Hines has for months, been urging that such legislation be enacted; he has secured President Coolidge's approval of the legislation, and in his annual report insisted that it is essential to the best interests of the Veterans' Bureau.

Navy Adopts Kahn Test as Standard

The U. S. Navy Medical Department, Dec. 30, 1925, notified all medical officers that hereafter the Kahn Test would be regarded as the standard test in the serum diagnosis of syphilis and yaws, and that it be so employed as a routine. It is now purely optional whether other tests are employed in the navy, but if employed, they are to be in addition to the Kahn Test. Unit outfits containing the necessary apparatus will be furnished all ships and stations on requisition to the U. S. Naval Medical Supply Depot, Brooklyn, and standardized antigen can be procured on request from the commanding officer, U. S. Naval Medical School, Washington, D. C.

Colonel Kennedy Appointed Assistant Surgeon General

Col. James M. Kennedy, U. S. Army medical corps, has been appointed assistant surgeon general to succeed Brig. Gen. James D. Glennan, who will retire for age, March 2. Colonel Kennedy graduated from South Carolina College in 1884 and the College of Physicians and Surgeons, Baltimore in 1892; he was commissioned assistant surgeon in the army in 1893. Recently, he was in command at the Letterman General Hospital, San Francisco, and during the World War, of the medical personnel at the port of embarkation at Hoboken; he has a D. S. M. and Navy Cross, and is 60 years of age.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Dec. 19, 1925.

Remedies for Tuberculosis: The Spahlinger Treatment

At a meeting of the Newport Medical Society, Dr. S. Lyle Cummins, professor of Tuberculosis in University College, South Wales, gave an address on recent remedies for tuberculosis. He described the work carried out in recent years by the medical staff of the Welsh National Memorial Association in the clinical testing of suggested remedies for tuberculosis. At the suggestion of the Medical Research Council and with the cooperation of Prof. Georges Dreyer, the diaplyte vaccine had been carefully tried in about 100 selected cases. In spite of the promising results in the preliminary tests on guinea-pigs, the results of a year's clinical trials had been disappointing. Although the results were good in a proportion of the treated cases, the majority had shown no such degree of amelioration as could be regarded as a success for the diaplyte vaccine. A still more extensive trial of sodium morrhuate, as suggested by Sir Leonard Rogers, had so far led only to inconclusive results, although several physicians had been so favorably impressed by its effects that they were continuing to use it. Møllgaard's "Sanocrysin," a gold salt, was now undergoing systematic investigation. The number of patients so far treated was small, owing to the fact that it had been found necessary to exercise great care in the selection of cases; but results of the highest interest had already been obtained, and it was hoped to apply the treatment to a wider group of cases during the coming year. Turning to the Spahlinger treatment, he said that the situation was quite different. No clinical trial could be conclusive unless accurate information as to the strength of each serum and each vaccine was placed at the disposal of the medical profession. This information had so far been withheld. In none of the published case records was the dose stated, an omission that was fatal to any real weighing of the value of the records in question. Inquiries addressed by him to the best known of the British physicians who had tried the Spahlinger remedies had elicited the curious fact that not one of them had known the strength of the preparations they had employed, the doses having been arranged by M. Spahlinger on a system known to him alone. Professor Cummins illustrated the difficulty by asking how a pharmacologist could test the effects of tincture of digitalis if he was merely given solutions of this drug without any indication as to their strength.

A discussion followed in which Dr. Rocyn Jones, health officer for Monmouthshire, said that he did not apologize for the fact that he was one of the chief protagonists for the trial of the Spahlinger treatment. There were very good reasons why M. Spahlinger had not disclosed the technic of his remedies and the dosage of partial and complete serums in terms of antitoxic units, as demanded by Professor Cummins. He had been strongly advised not to do so at this juncture by first rate clinicians in the best interests of the tuberculous patient and of Spahlinger himself. Unfortunately, bacteriologists who had been privileged to see the workings of Spahlinger's laboratory not long afterward told patients that they were going to prepare them a vaccine by Spahlinger's methods—an utterly impossible proposition. Spahlinger's reason why he had not published every detail of his process was that he was anxious that clinical proof of the value of his methods should first be demonstrated by more extensive clinical trials, because he felt that if other workers for any reason were unable to produce the results which he

had obtained, it would react disastrously on the future general application of his treatment. He stated that, when these demonstrations had proved beyond doubt the efficacy of his system of treatment, he was prepared to make known his methods and technic so that the treatment might be available in every country.

Sir Ronald Ross' Campaign Against Malaria in Ceylon

Sir Ronald Ross has sailed for Ceylon in connection with a campaign against malaria. One of the primary objects in the founding of the Ross Institute and Hospital for Tropical Diseases was to create interest throughout the empire in combating this disease. About twenty-five years ago Sir Ronald, who is director-in-chief of the Ross Institute, discovered the carrier of this disease, and, although the successful application of his discovery has rendered certain tropical areas health resorts, compared with what they were at one time, proportionately little progress has really been made throughout tropical and semitropical countries. Addressing members of the Ceylon Association recently, Sir Ronald proposed a scheme calling for the cooperation of all plantation companies, believing that it should be possible, within a short time, to drive malaria out of Ceylon. In certain parts of Malaya, southern India and Assam, groups of plantation companies are dealing effectively with malaria; but if Sir Ronald's mission succeeds it will not be a question of small areas being cleansed, but the whole country. It is his intention to group plantation companies geographically, and each group will be dealt with by a resident malarial expert, who will carry out malaria control measures according to the conditions peculiar to his particular group, and report from time to time to a central committee the progress made and difficulties encountered. Every facility will be given to individuals to combat the disease effectively. It is hoped that Sir Ronald's visit will create worldwide interest in the urgent necessity of dealing drastically with tropical diseases generally. This will be beneficial to the empire, and will hasten its profitable development.

An Overlooked Swab

At an inquest concerning the death of a woman, aged 29, an allegation was made that a swab had been left in her body after one operation and had been found during a further operation. A verdict of "death from misadventure" was returned. It appeared that the deceased entered St. Mary's Hospital, Manchester, July 11, 1925. She was operated on and returned to her home, where she was confined to her bed for nine weeks. On readmission to the hospital a further operation was performed, in the course of which a swab was found to have been left in the body after the first operation. An abscess had set up, and death ensued from peritonitis. A sister at the hospital said that she was present when the first operation was performed. The method followed at operations was to serve out swabs in packets of ten, one packet being used at each operation. The number was checked at the beginning, checked again at the conclusion, and signed for in a special book. This process was followed at the first operation on the deceased, and she signed for ten swabs at its conclusion. She could not account for the swab since found. Another sister at the hospital said she made up the packets of swabs the day before the operations. In reply to a question, she agreed that there might have been eleven swabs in the packet. Dr. Hunter, resident obstetric surgeon at St. Mary's Hospital, stated that he assisted Dr. Bride at the first operation. A most careful examination was made at the close, and there was no sign of any swab having been left in the patient's body. He was present at the second operation when the swab was found. There was an abscess in the abdomen, and in the center was a swab, presumably left at the first operation. The ultimate cause of death was peritonitis. The coroner in returning a verdict of "death from misadventure" said there was no doubt as to the cause of death. At the same time the publication of this case might raise a wrong impression in people's minds. This was one of those cases in which a person became accustomed to performing a certain duty a great many times, and occasionally a mistake occurred. He was quite satisfied that nothing in the nature of criminal negligence had taken place.

The British Social Hygiene Council

The British Social Hygiene Council has just issued its tenth annual report, the first published since the title of the council was changed from that of the National Council for Combating Venereal Disease. The change of name connotes an extension of policy, for it has been decided to supplement the purely medical methods of fighting disease by an attack on those social evils which have been found to favor the spread of disease. It brings the organization, moreover, into more direct relation with similar organizations established throughout the empire. The aims and objects of the council are now defined as: 1. To preserve and strengthen the family as the basic social unit. 2. To promote educative and social measures directed toward the development of control of the racial instinct. 3. To emphasize the responsibility of the community and the individual for preserving or improving, by educative and social measures, the quality of future generations. 4. To further social customs that promote a high and equal standard of sex conduct in men and women. 5. To promote the prevention and treatment of venereal diseases by appropriate educative, medical and social measures. 6. To promote the elimination of commercialized vice. 7. To promote the removal of conditions conducing to promiscuity. 8. To cooperate with the various organizations interested in the foregoing subjects with a view to coordinating efforts to secure these ends. The report draws attention to the progress achieved, and it is shown that between 1920 and 1924 the number of new cases of syphilis presenting themselves for treatment has fallen from 42,000 to 22,000 despite the fact that the number of attendances had risen in the same time from 1,488,000 to 1,645,000.

MADRID

(From Our Regular Correspondent)

Dec. 1, 1925.

The Recent Spanish-Portuguese Urologic Congress

A Spanish-Portuguese urologic congress was held recently at Lisbon. A Portuguese urologist, Dr. E. Bastos, who represented his country, suggested that Spanish urologists should go in a body to Lisbon to hold there a joint meeting with their peninsular neighbors. The sessions proved a great success, as Spanish physicians appeared in force. The occasion also paved the way for more cordial scientific relations. Finally, the Portuguese government honored a number of Spanish surgeons with the order of the Espada (sword). In Spain, bullfighters are called *espadas,* and colloquially surgeons are also nicknamed thus. The new honors have furnished a subject for good-natured banter.

An Odontologist in the National Academy of Medicine

The highest honor a Spanish physician may expect to reach is membership in the exclusive National Academy of Medicine. Each new appointment arouses, therefore, a great deal of interest. The last election proved, however, even more exciting than usual. Dr. Florestán Aguilar, the creator of the Spanish Odontological School, has succeeded in raising his specialty, both scientifically and economically, to a rank fully equal to that of any other medical specialty. The National Academy of Medicine decided to recognize such

unusual abilities by calling him to share in its tasks as a fullfledged member. Strange to say, the dentists have been the ones to take exception to an honor so richly deserved.

Tuberculosis Congress

The tuberculosis campaign in Spain is in charge of a few physicians, employed by the government. A central board was also constituted, but mostly composed of noblemen and moneyed people. As usual, these people are too busy to devote much attention to such work; they accept the appointments only in order to parade the position on their visiting cards. When they happen to take any interest in some pending question, it is mostly to exhibit their complete ignorance of scientific matters and to show narrow views and silly prejudices. So far the prevailing policy has been to spend all available funds on the patients and not one cent on those attending them. The physicians at the top accepted this system, as the very fact that they were in the public eye brought them publicity and authority, with an increase in practice and therefore pecuniary returns. The physicians filling secondary positions felt differently. Their displeasure found expression at the recent antituberculosis congress at Fuenfría. The physicians employed in the several antituberculous institutions carried through a protest against present methods in antituberculosis work. This action embodied, however, a tactical error, as the public naturally resented the apparent effort of the physicians to turn to their own use funds heretofore assigned to patients. The congress and its resolutions would have soon passed into oblivion, had it not been for the unwise action of the physicians in official charge of tuberculosis work. Irking under the criticisms aimed at them at the above-mentioned congress, they saw fit to protest to the government against holding a similar meeting, already announced at La Toja, Coruña, one of the best known spas. This meeting had so far attracted but scanty attention. The public now took the other side of the question and persisted in seeing in the protest a desire of bureaucrats to silence any possible criticism of their activities. Even the government felt bound to interfere and, instead of forbidding the meeting, announced that the secretary of the interior would preside over it.

In view of the small appropriations available for antituberculosis work, it must be recognized that all engaged in it must show self-sacrifice. The funds needed to combat tuberculosis must be sent to Morocco to fight Abd-el-Krim.

More Congresses

The tenth Spanish Congress on Odontology was recently held at Saragossa. The resolutions approved called for suppression of illegal practitioners; establishment of municipal dental services in all towns of more than 10,000 inhabitants; completion by students of the first three years of the medical curriculum before beginning the regular three year dentistry course, and support of the League of Nations recommendation that substitutes of cocaine be used to prevent drug addiction.

The pharmacists also held in the same town their twelfth meeting. The resolutions pleaded for changes in pharmaceutic teaching, establishment of pharmacologic laboratories, and limitation in the number of drug stores, especially army ones. These military drug depots are proving impossible competitors, as they furnish everything practically at cost. While nominally they serve only the army personnel and an identification card is required, the fact is that soldiers show themselves very generous in lending their cards around.

Death of Dr. Lluria

Dr. Enrique Lluria, a cousin of Albarrán, and likewise a urologist who practiced many years in Madrid, has just died in Latin America. His exuberant personality would not fit in the commonplace bourgeois life. This compelled him to give up his successful practice in search of new fields to conquer. His scientific and literary gifts found expression in several books, the most noted of which was "Superorganic Evolution." Then he became a socialist and even converted his wife, a member of the highest aristocracy, to this creed. As a result, both would be found on the platform. The only pity seems to be that such a brilliant mind should have turned his back on the profession he was so eminently fitted to adorn.

ITALY

(From Our Regular Correspondent)

Nov. 30, 1925.

Award of Prizes by Italian Pediatric Society

The Società italiana di pediatria has awarded the four Felice Mantovani Foundation prizes for articles on the physiology and pathology of nutrition of the nursing mother, as follows: Prof. G. Frontali, "Studies on the Fats in the Nutrition of Nursing Mothers"; Prof. A. Drago, "Anaphylactic Reaction of the Child to Foods"; Dr. G. Bentivoglio, "The Digestion of Fat in the Nursing Mother," and Prof. R. Vaglio, "The Disturbances of Nutrition in the Nursing Mother." Similar prizes were announced for the current year.

Aid for Children of Physicians Who Fell During the War

The third meeting of the committee in charge of aid for the families of physicians who fell in the war was recently held in Rome under the chairmanship of General della Valle, M.D. The committee aided forty-five children of deceased physicians. Three have been admitted gratuitously to the Istituto per orfani dei sanitari, in Perugia, while the others have been granted students' scholarships so that they can remain in families. Aid will be extended them up to 1942, by which time they will be able to face life alone. But even after that time the committee will have general oversight of its charges concerning development of character and progress in school and university. It is the purpose of the committee to replace, as far as possible, their fallen colleagues, by assisting their offspring, morally and financially, until they have graduated from the university.

The Maritime Hospice at Rome

The Ospizio marino, or maritime hospice, located at Ostia, was taken over three years ago by the committee of Rome for combating tuberculosis. It has now, however, been restored to the commune of Rome, which plans to develop it. With this object in view, Senator Cremonesi invited a number of distinguished authorities and notables of Rome to convene at Ostia, November 11, in order to explain to them the plans that were being entertained for the enlargement of the hospice. It will admit poor children, aged 5 to 12, who are predisposed to tuberculosis or even affected with tuberculous disease, provided they do not present contagious manifestations. With the completion of the plans, the hospice will accommodate 300 children.

Congress of Ophthalmology

The Società italiana di oftalmologia convened recently in Rome under the presidency of Professor Cirimione. The first scientific session of the congress dealt with cataract, especially its treatment. Professor Angelucci referred to his experiences in the Scuola italiana, in the medical treatment of cataract. Professor Albertotti emphasized the futility of attempting to cure cataract without surgery. It is impossible through medical treatment to restore to the lens its transparency. After communications from Professors Falchi and Addario were presented, Professor Viterbi illustrated with lantern slides a number of cases of cataract examined with

the slit lamp before and after operation. Professor Lo Cascio referred to the alkalinity of the blood in patients with cataract.

The second session of the congress was occupied with the announcement of the award of prizes for ophthalmologic research. The Cirimione international prize was awarded to Dr. C. Déjèan for his anatomic and embryologic studies on the hyaloid membrane of the eye in mammals. The Cidonio national prize was bestowed on Professor Cattaneo for his researches on tuberculosis of the choroid. The Colangeli prize was assigned to Dr. Seullica for his article on the anatomic basis of the perimetric findings with reference to the blind spot in the human eye. The prize for the best researches on the anatomy of the eye was granted to Professor Versari, professor of anatomy in the University of Rome, for two articles, on the morphogenesis of the blood vessels and on the progressive and the regressive phases in the development of the tunica vasculosa lentis and the morphogenesis of the blood vessels in the ciliary processes and in the iris of the human eye. Lastly, the prize offered by the *Annali di oftalmologia clinica oculistica* was awarded to Professor Favadoro for his clinical and experimental researches on traumatic glaucoma.

After the announcement of the prize awards, scientific work was again taken up. Professor Scalinei discussed several cases of retinal angiopathy. Professor Fracassi presented a new operative method in dacryocystitis, with restoration of the lacrimal duct. Professor Raverdino spoke on retinitis supposedly caused by roentgen rays. The assembly requested Professor Raverdino to institute an inquiry among roentgenologists as to the possible existence of eye changes resulting from the use of roentgen rays, and to present a report at the next meeting of the society.

Many other interesting communications were presented. At the last session, Professor Contino exhibited apparatus for the production of half-tone illustrations of any size desired. He emphasized the importance of motion pictures for instruction, and projected a film showing a schematic iridectomy operation. Professor Cirimione exhibited two interesting films, showing the operations for entropion and for staphylectomy, which were made with the modern cinematographic equipment installed in the Clinica oculistica at the University of Rome.

The society voted to write to the committee on organization of the next International Congress of Ophthalmology requesting recognition of Italian as one of the official languages of the congress, declaring that otherwise the members of the Italian ophthalmologic society would find it impossible to attend.

Activities of the Delegates of the Italian Red Cross Society at the Twelfth International Conference

At the twelfth International Conference of the Red Cross Society, held at Geneva in October, General Baduel, M.D., director of the Italian Red Cross and Italian delegate to the conference, advocated that airplanes of the army medical corps be considered neutral. His proposals were unanimously accepted by the assembly. He spoke also, among other subjects, on the relations of the Red Cross and the army medical corps, and on the adoption of an identification card for the use of members of the Red Cross sojourning in foreign lands. This would enable them to secure aid from foreign chapters of the Red Cross, as was first proposed by Senator Ciraolo, who entered into an agreement of this nature with the American Red Cross, with the best results. Also the proposed Unione internazionale del soccorso (likewise a project of Senator Ciraolo) was discussed. After the conference, General Baduel spoke at the atheneum on the part that the Italian Red Cross had taken in the crusade against malaria in Italy. An exhibition of sanitary material, under the auspices of the Italian Red Cross, was held, showing the principal types of tents used in war and in public calamities, and graphic demonstrations of various forms of work of the society in times of peace were given.

NETHERLANDS

(From Our Regular Correspondent)

Nov. 30, 1925.

The Fourth International Congress on Industrial Accidents and Occupational Diseases

In addition to the items mentioned in my last letter (THE JOURNAL, Dec. 5, 1925, p. 1825), I call attention to several other papers presented at the fourth International Congress on Industrial Accidents and Occupational Diseases, held in Amsterdam:

ACCIDENTS IN RELATION TO DISEASE

Professor Cunéo of Paris pointed out the mutual influence of diseases and accidents. While it is apparent that an accident may create or aggravate a disease, it is evident that not every disease is of traumatic origin. He emphasized (1) the importance of determining the symptoms, if any, that the patient presented before the accident; (2) the time that elapsed between the accident and the appearance of symptoms; (3) the nature of the disease and the significance of trauma in its pathogenesis. The workman should receive the benefit of any doubt. The problem of the influence of disease on accidents does not admit of ready solution.

THE DIAGNOSIS AND THE DOMAIN OF OCCUPATIONAL DISEASES

Dr. Teleky of Düsseldorf brought out that statistics on the mortality of various occupations (for example, English statistics) show nothing as to the relations between mortality and work. In addition to the occupation itself, the psychophysical constitution of the workers, as well as the economic and social conditions of the occupation, play a big part. Insurance should be limited to specific occupations. Almost everywhere, occupational intoxications are placed on the same footing as accidents, although the details of the method vary. Diagnostic difficulties are overcome after examination by capable clinicians who have specialized in the field in question. Personal susceptibility and the nature of the intoxication modify the clinical aspects of cases and prevent the establishment of reliable rules. The government should appoint physicians to serve on factory inspection boards. A thorough course in occupational pathology, including industrial accidents and occupational diseases, should be obligatory for students of medicine.

WORKMEN'S COMPENSATION IN ENGLAND

Prof. J. Glaister (England) described the development in his country of legislation in favor of workingmen. The employers liability act of 1880 recognized the responsibility of the employer only in cases of incapacity or negligence. The first workmen's compensation act was passed in 1897. According to this law, accidents caused through the fault of employers were not indemnifiable unless death ensued. The report of the government commissions of 1903 and 1919 led to the introduction, in 1906 and in 1923, of important modifications in the law, which the author explained. The workman with a remuneration of less than £300 is entitled to compensation under the act. In case of death from accident, the workman's dependents are entitled to a sum not to exceed £600. No compensation is paid for the first three days after the beginning of disability. In case differences arise between the workman, the employer and the respective physicians, a medical referee is appointed to decide between them. Many occupational diseases come under the law. The number of

industries in which government supervision is compulsory is increasing constantly. The state may enact measures requiring employers to insure their compensation liabilities. The speaker favored medical examination of an applicant before a choice of occupation is made. Such a precaution would diminish the danger of industrial accidents and occupational diseases. The qualifications required in the various occupations should be determined as a basis for vocational guidance.

FINDING SUITABLE EMPLOYMENT FOR HANDICAPPED PERSONS

Supervision of labor, inquiry into the adaptability of applicants for employment, and social hygiene measures have increased the number of workers classified as handicapped. At present society abandons these individuals, since it is difficult to find a place for them in the industries. The number of such handicapped persons exceeds 200 per 10,000 workers (ninety are ill, thirty are victims of accidents, and forty are mentally abnormal). Dr. Heyermans of Amsterdam referred to the urgent need of a service to find suitable employment for handicapped persons. Not only the handicapped workers themselves but also society is interested in seeing their capacity for work become productive. Workshops and educational centers for handicapped persons should be established; these would be suitable also for some types of convalescents. The authorities, insurance societies, and organizations of employers and of workmen should cooperate in the establishment of such a service. At the employment bureaus, a special section under medical and technical direction should be created to aid handicapped persons in securing employment. This problem is closely connected with that of unemployment in general, for the unemployed consist to a great extent of handicapped persons.

WOUNDS OF THE HAND

According to Professor Wittek of Graz, the final result in wounds of the hand depends mainly on the character of the first aid received. More than for any other wound, the twenty-four hours that precedes infection is of paramount importance. Owing to the danger of infection, patients with wounds of the hand should be hospitalized for at least two or three days.

INSURANCE OF AGRICULTURAL LABORERS

Dr. Pisente of Italy discussed the workmen's compensation law in Italy as applicable to agricultural laborers. Since the law has been in force, it has been found that the number of such laborers is much larger than was supposed. Of the 40,000,000 inhabitants of Italy, 9,000,000 have claimed the benefits of this law. Also the number of accidents that have occurred has exceeded all expectations. In the face of certain factors, it is difficult to reduce the number of accidents by a "safety first" campaign. For instance, most of the accidents are caused by animals, and there is no central organization to give first aid. However, the author, with the aid of the Italian Red Cross, has attempted to organize in Italy first-aid stations in the outlying villages.

ELECTRICAL ACCIDENTS

Professor Schridde gave the results of his studies on thirty-nine cases of electrocution, in which an alternating current of from 220 to 250 volts had passed through the hands, trunks and feet of the victims. In thirty-eight of the cases a status thymicolymphaticus was observed. No changes, even of a microscopic nature, were noted in any organ. Edema of the lungs was observed in twenty-one cases, which indicates that these victims did not die until several seconds after the accident; the seventeen others had died instantly. It has not yet been determined why those with a thymicolymphatic diathesis are more susceptible to electric currents and die from fibrillation of the heart. Efforts at resuscitation will not avail unless instituted within a few seconds after the accident.

Professor Jellinek presented observations tending to show that electrical shocks cause merely apparent death. Artificial respiration, if properly performed for two, three or four hours, will sometimes resuscitate the victim.

INTOXICATIONS

Several communications were presented on intoxications caused by hydrogen sulphide, carbon disulphide, hydrocarbons and hydrogen phosphide. Drs. Van Ryssel and Van Herwerden called attention to the dangers of ferrosilicon, and Van Herwerden recommended international regulations with regard to the handling of it. Regulations in force on the Rhine at present have not solved the problem. Many serious cases of poisoning are still observed. Oral and written warnings have not availed to prevent them. It was suggested that the League of Nations might find here a useful field of labor.

BERLIN

(From Our Regular Correspondent)

Nov. 28, 1925.

The Excess of Females in Germany

Germany's excess of women over men, according to the census of 1910, with a population of 64.9 million, was 846,000, which indicates that there were 100 women to 97.4 men. The census of Oct. 8, 1919, gave, in the territory reduced by cessions and war losses, a population of 59.9 million and an excess of females over males amounting to 2,860,000 or for 100 women only 90.9 men. The reliability of the 1919 census, however, may have been influenced by postwar conditions. In view of that fact, the preliminary report of the census taken last summer is especially interesting from the standpoint of the distribution of the sexes. In the whole German territory, exclusive of the Saar region, 30,170,000 males and 32,305,000 females were recorded, which points to an excess of females of 2,135,000, or 93.4 men to 100 women, as compared with 97.4 before the war (1910).

This excess of females is noted in all the federal states, and, with the exception of Westphalia, where heavy industries require proportionately more man power, in all Prussian provinces, as well. The discrepancy is most marked in Berlin, where there are only 85.5 men to 100 women. According to the 1910 census, the males exceeded the females at all ages up to 22, with the single exception of age 15, which was represented by an almost equal number for the two sexes. With age 22, the females begin to gain a slight preponderance over the males; that is, in the years marked by the greatest vitality, which is a result of the lower mortality rate among women at this age, and, to a still greater extent, to the greater tendency of males to seek adventure and better opportunities to make a fortune, in foreign lands. However, women of the 25 to 35 age-group seem to present a greater mortality than the men of the same group. Still later—from about age 35 on—and even through the years of the menopause, the mortality of females is usually lower than that of males, who seem affected by occupational factors and pleasure-loving tendencies. Thus there arises, along with the constant loss of males through emigration, an excess of females, which, with increasing age, tends to be still further augmented.

Under normal conditions, such as characterized the census of 1910, the excess of females increases rapidly beginning with age 40. In the 60-70 age-group it reaches nearly 22 per cent, increases in the two following decades to 29 and 42 per cent, and in the 90-100 age-group amounts to 75 per cent. There were only fifteen men more than 99 years old, as against forty-eight women.

Ten Rules of Health

The German Red Cross Society has published a health tract entitled "How to Keep Well." The content is as follows:

1. Health of body and mind is the greatest blessing. Do everything to preserve and enhance this precious blessing. Avoid everything that injures or undermines your health. Be sensible!

2. Let scrupulous cleanliness be your first law for the preservation of health. Most diseases are caused by minute organisms invisible to the naked eye (bacilli), which are transmitted from one person to another. Use soap and water freely. Do not wash just the uncovered portions of the body. The hands should be washed before every meal. Keep your finger nails clean. Keep your dwelling clean. Avoid useless dust-catchers; for example, heavy draperies. The floors should be wiped up daily with a moist cloth. Let in plenty of air and sunshine. Sleep, if possible, with your window open.

3. Make your body stronger and more resistant by means of sensible physical exercise. Room gymnastics should be employed for about five minutes, morning and evening. Take part in the forms of exercise recommended by systematically conducted societies that strive to strengthen the human body. Hiking, games, gymnasium drill, rowing, bathing and swimming are excellent health builders.

4. Take care of your teeth from earliest youth. Mothers, watch your children's teeth. Rinse your mouth and clean your teeth mornings and evenings—if possible, after every meal. Have your teeth examined by a dentist at least twice a year.

5. Remember, well chewed food is half digested. A sensible diet is the primary basis of life and health. Eat rye bread made from whole rye flour that contains all the nutritive material of the grain. Potatoes cooked with the skins on agree best with most persons. Use plenty of fruit and vegetables (do not discard the water in which the latter are cooked). Salads, raw carrots, tomatoes, tropical fruits, and other articles of food that may be eaten raw, contain important accessory food factors (vitamins). Meat, though held in high favor, is not an absolutely necessary article of diet; there are, however, no objections to its use in moderate quantities (children should eat very sparingly of it). A one-sided meat diet may produce injurious effects. A meatless day now and then is a good prophylactic measure. In place of butter, healthy persons, at least, may use without hesitation vegetable and animal fats, or margarines composed partly of each; the alleged dearth of vitamins can be compensated for by the use of other foodstuffs rich in vitamins. Cheese is inexpensive, rich in calories and easily digested. Overseasoning of food is injurious. Coffee in small quantities is harmless but may work injury if used to excess. Better beverages would be coffee substitutes made from grain or malt, or coffee from which the caffeine has been mostly removed. The best beverage is milk. Unfermented grape juice and fruit juices may be highly recommended.

6. Avoid alcoholic beverages. The alcohol found in these beverages (beer, wine, brandy, cider, and others) is a poison which reduces a person's physical and mental performance and lessens his resistance to disease. It weakens one's sense of responsibility, and causes numerous misdemeanors, crimes and accidents, especially automobile accidents, and favors to a marked extent the development of venereal diseases. Alcohol constitutes an especially grave danger for children and juveniles. Adults may be injured as to health, economic position and moral character not only by the excessive but also by the habitual moderate use of alcoholic beverages. Alcohol damages the germ cells and thus weakens the oncoming generation. The central federal bureau (*Reichshauptstelle*) for combating alcoholism (Berlin-Dahlem, Werderstrasse 16), together with the amalgamated leagues against alcoholism therein represented, will gladly furnish information in regard to books, pamphlets and leaflets on alcoholism.

7. Beware of venereal diseases. Persons who conduct themselves sensibly can avoid them. Do not neglect this warning. The German society for combating venereal disease (Berlin W. 66, Wilhelmstr. 45) furnishes information and leaflets free of charge. If you become infected, go to a physician and not to a quack. Only prompt and careful treatment can effect a cure and prevent a long, severe illness. A person who, knowing himself (or herself) to be infected with venereal disease, exposes another person to infection is subject to prosecution.

8. Do not forget that tuberculosis is a contagious disease. Contagion is transmitted chiefly by the coughing of tuberculous persons (tubercle bacilli). Do not cough so as to endanger any one near by. Do not expectorate on the floor. All sputum should be rendered innocuous. Crowded dwellings, uncleanliness, undernutrition and weakness of body favor the contraction of tuberculosis. Young children, especially, should be protected against contagion. Many aged persons who cough are spreading tuberculous infection without knowing it. Ask the tuberculosis welfare centers for advice. The German central committee for combating tuberculosis (Berlin W. 9, Königin-Augusta-Str. 7) will furnish explanatory literature on request.

9. Protect the oncoming generation. Infant mortality can be greatly reduced by proper care and correct diet. Prenatal care should not be neglected. Expectant mothers will receive advice and, if need be, financial assistance at the consultation centers established for their benefit. Mothers, nurse your own children. It is the best protection you can give them. If the baby is ill, consult a physician without delay or go to the infant welfare center. The Kaiserin-Auguste-Victoria-Haus, a federal institution for combating mortality of infants and young children (Berlin-Charlottenburg 5, Frankstr. 3), provides information and literature (pamphlets, leaflets, picture atlas, lecture courses, exhibits), and, together with the German society for the protection of infants and young children (same address), promotes the welfare of infants and young children. Many cripples might avoid their handicapped condition if they promptly consulted a specialist. Even in severe cases, proper treatment will often restore a patient to such an extent that he can earn his own living. It is estimated that 50 per cent of the cripples might have avoided the more serious factors of their handicap if they had received proper treatment early. In Prussia a law provides for the care of all cripples who are in need of help. Every township (*Kreis*) has an official welfare center for cripples. Similar provisions are found in all countries.

10. Arrange your day's work in accordance with the demands of health. Eight hours for work, eight hours for sleep (for adults—children need a longer period) and eight hours of quiet recreation suggest a normal division of the day. Do not turn the night into day

Marriages

WILLIAM DRUMMOND MIDDLETON, Maturin, Venezuela, South America, to Miss Elizabeth Howe of Brooklyn, at Port of Spain, Trinidad, B. W. I., Nov. 30, 1925.

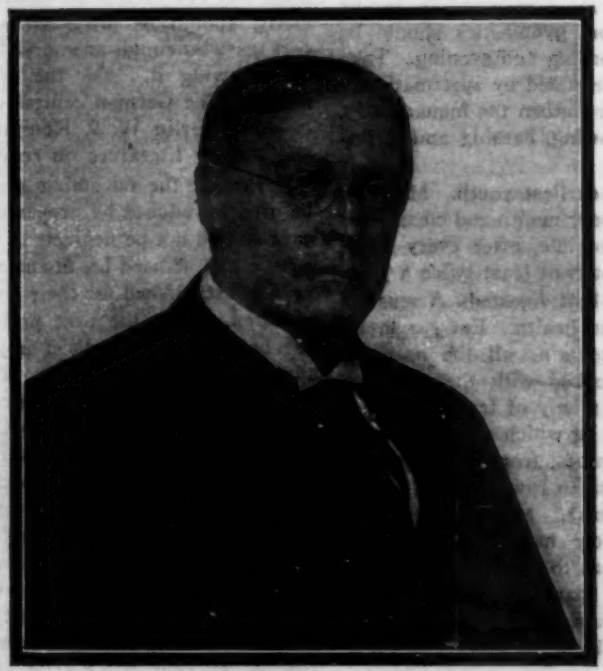
HARVEY HOLMAN BROWN, Little Rock, Ark., to Miss Alice Elvira Lucas of Evanston, Ill., Sept. 16, 1925.

PIERRE PARKER REDMAN, Joplin, Mo., to Miss Margaret Reynolds of Fort Smith, Ark., recently.

EUGENE A. LAURISIN, Youngstown, Ohio, to Miss Irene Ann Beretz of Lorain, Ohio, Dec. 29, 1925.

Deaths

James Taggart Priestley ✠ Des Moines, Iowa, died, Dec. 11, 1925, aged 73, of heart disease. He was born in the old Priestley home at Northumberland, Pa., built by his famous ancestor, Joseph Priestley, in 1794. Dr. Priestley received the M.D. degree from the University of Pennsylvania School of Medicine, Philadelphia, in 1874, and began practice in Des Moines in 1875, completing fifty years of medical practice in that community before his death. In 1915 the *Journal of the Iowa State Medical Society* issued a special number in his honor. During his entire career he entered fully into the medical life of his city, of his state and of the national association, which in 1896-1897 he served as secretary of the Section on Medicine, and from 1894-1900 as a member of the Board of Trustees. In 1900 he was elected president of the Iowa State Medical Society, and from 1909 to 1911 was professor of medicine in Drake University Medical School. In connection with his medical practice, he served also as medical director of several large insurance companies. The descendants of Dr. Joseph Priestley, famed in the history of chemistry as the discoverer of oxygen, include several physicians who have graduated from the University of Pennsylvania. Dr. James Taggart Priestley has been a distinguished exponent of medicine in the Middle West. His high intellectual attainments and his personal charm made him a recognized representative of the exceptional qualities attributed to the best type of family physician and cultured clinician.



JAMES TAGGART PRIESTLEY, M.D., 1852-1925

Marcus Feingold ✠ New Orleans, well know as an ophthalmologist, died at the Touro Infirmary, Dec. 26, 1925, after a long illness. Dr. Feingold was born in Roumania in 1871, and received his medical degree from the University of Vienna in 1896. He began practice in New Orleans in 1897, and soon devoted himself exclusively to diseases of the eye. Since 1907, he was professor of ophthalmology in the Tulane University of Louisiana School of Medicine, holding also membership on the medical staff of the Touro Infirmary and other hospitals. Dr. Feingold was especially well known for his activities in medical societies, filling positions of leadership in his county and state societies and serving as chairman of the Section on Ophthalmology of the American Medical Association at the Annual Session in 1924-1925. He was also a member of the American Board for Ophthalmologic Examinations, the American Ophthalmological Society and the American Academy of Ophthalmology and Otolaryngology. His contributions to the literature of ophthalmology were extensive. It is significant that his chairman's address dealt primarily with the value to the specialist, as well as to the general practitioner, of constant interest in medical organizational affairs.

Charles Geraldus Hill ✠ Baltimore; Washington University School of Medicine, Baltimore, 1870; formerly professor of nervous and mental diseases, Baltimore Medical College, and emeritus professor of psychiatry at the University of Maryland School of Medicine and the College of Physicians and Surgeons; member of the American Psychiatric Association, president, 1906-1907; past president of the Medical and Chirurgical Faculty of Maryland; physician in chief, Mount Hope Retreat, 1886-1925; aged 76; died, Dec. 30, 1925, of heart disease.

James Carlton Carson, Syracuse, N. Y.; Bellevue Hospital Medical College, New York, 1870; member of the Medical Society of the State of New York; formerly associate professor of mental diseases, Syracuse University College of Medicine; assistant physician, Willard (N. Y.) State Hospital, 1870-1883; superintendent of the Syracuse State Institution for Feeble-Minded Children, 1884-1912; aged 78; died, January 1.

William Morgan Smith, Richmond, Va.; University of Maryland School of Medicine, Baltimore, 1880; member of the Medical Society of Virginia; president of the Virginia State Board of Health; executive secretary of the Virginia Tuberculosis Association; served in the Spanish-American War; for eight years postmaster of Alexandria; aged 66; died, Dec. 22, 1925, of cerebral hemorrhage.

William Kinnicutt Draper ✠ New York; Medical Department of Columbia College, New York, 1888; professor of clinical medicine at his alma mater; on the staffs of the Bellevue and New York Orthopedic hospitals; aged 62; died, January 5, of heart disease. Dr. Draper served as trustee of the Children's Aid Society and as a member of the advisory staff of other institutions.

George Montague Swift ✠ New York; Medical Department of Columbia College, New York, 1879; formerly associate in clinical medicine, Columbia University College of Physicians and Surgeons; at one time on the staffs of the Orphan's Home and Asylum of the Protestant Episcopal Church in New York, and St. Mary's Free Hospital for Children; aged 69; died, Dec. 26, 1925.

William M. Menah ✠ Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1890; formerly instructor and chief clinical assistant in otology at the Medico-Chirurgical College of Philadelphia, and lecturer on otology at his alma mater; for twenty years on the staff of the Medico-Chirurgical Hospital; aged 57; died, Dec. 26, 1925.

Charles Henry Whitlatch ✠ Louisville, Ky.; Hospital College of Medicine, Medical Department Central University of Kentucky, Louisville, 1905; formerly assistant in surgery, University of Louisville School of Medicine; at one time city health officer; aged 45; died, Dec. 19, 1925, of pneumonia.

Thaddeus Halsted Myers ✠ New York; Medical Department of Columbia College, New York, 1885; formerly on the staffs of the New York Foundling, St. Luke's, and Lying In hospitals, New York, and the All Souls' Hospital, Morristown, N. J.; aged 66; died, Dec. 25, 1925.

Ronayne Kirkbride Cleborne, Philadelphia; Jefferson Medical College of Philadelphia, 1895; professor of physiology, hygiene and dietetics, Temple University School of Medicine; aged 52; died, Dec. 30, 1925, at the Presbyterian Hospital, of myocarditis.

David C. Harrison, Kite, Ga.; University of Georgia Medical Department, Augusta, 1892; member of the Medical Association of Georgia; member of the state legislature; aged 60; died, Dec. 23, 1925, at a sanatorium in Sandersville, following an operation.

Thomas B. Johnson, Frederick, Md.; University of Maryland School of Medicine, Baltimore, 1889; member of the Medical and Chirurgical Faculty of Maryland; on the staff of the Frederick Hospital; aged 57; died, Dec. 25, 1925, of pulmonary edema.

William Furness Jarvis, Waltham, Mass.; Medical School of Harvard University, Boston, 1880; member of the Massachusetts Medical Society; for nine years member of the school board; aged 68; died, Dec. 25, 1925; following an appendectomy.

George Howard McFadden ✠ Hackensack, N. J.; Bellevue Hospital Medical College, New York, 1889; member of the American College of Physicians; formerly on the staff of the Hackensack Hospital; aged 59; died, Dec. 30, 1925, of heart disease.

Peter Franklin Smith, Uniontown, Pa.; University of Michigan Medical School, Ann Arbor, 1887; member of the

Medical Society of the State of Pennsylvania; on the staff of the Uniontown Hospital, where he died, Dec. 19, 1925, aged 68.

John Whitfield Merryman ✠ Kennett Square, Pa.; Jefferson Medical College of Philadelphia, 1899; served in the M. C., U. S. Army, during the World War; aged 49; died, Oct. 7, 1925, at St. Augustine, Fla., of acute dilatation of the heart.

Walter Thorn Flanagan, Ashland, Ky.; Hospital College of Medicine, Medical Department Central University of Kentucky, Louisville, 1903; served in the M. C., U. S. Army, during the World War; aged 55; died, in December, 1925.

Matthew Dalton Phillips, Dalton, N. C.; Medical Department of the University of the City of New York, 1880; member of the Medical Society of the State of North Carolina; aged 74; died, Dec. 20, 1925, of bronchopneumonia.

Charles Edward Simpson ✠ Lowell, Mass.; Medical School of Harvard University, Boston, 1883; since 1907 state district health officer; formerly superintendent of the Lowell Corporation Hospital; aged 63; died, Nov. 13, 1925.

Joseph Daniel Hartnett, Winsted, Conn.; Baltimore Medical College, 1911; member of the Connecticut State Medical Association; on the staff of the Litchfield County Hospital; aged 39; died suddenly, Dec. 26, 1925.

George Philip Miller ✠ Oak Park, Ill.; Rush Medical College, Chicago, 1903; formerly on the staff of the Robert Burns Hospital; aged 46; died, Dec. 28, 1925, of chronic myocarditis, chronic nephritis and hypertension.

Samuel A. Street, Wellington, Tex.; University of Tennessee College of Medicine, Memphis, 1901; member of the State Medical Association of Texas; aged 56; died, Dec. 21, 1925.

Thomas Walter Kay, McKeesport, Pa.; University of Pittsburgh School of Medicine, 1896; on the staff of the McKeesport Hospital; aged 54; died, Dec. 8, 1925, of heart disease.

Thomas Edward Roach, Renovo, Pa.; College of Physicians and Surgeons, Chicago, 1890; member of the Medical Society of the State of Pennsylvania; aged 60; died, Oct. 29, 1925.

Charles Moore Wilson ✠ Salem, Mass.; Medical School of Maine, Portland, 1911; on the staff of the Salem Hospital; aged 42; died suddenly, Dec. 9, 1925, of heart disease.

John Dunlap, Seattle; Baltimore University School of Medicine, 1899; University and Bellevue Hospital Medical College, New York, 1900; aged 69; died, Nov. 4, 1925.

Edwin Hathaway Norton, New York; Medical Department of Columbia College, New York, 1883; aged 66; died, Dec. 10, 1925, of injuries received when struck by a street car.

John McAlpine, Lindsay, Ont., Canada; University of Toronto Faculty of Medicine, Toronto, 1875; for thirty-five years city health officer; aged 75; died, Dec. 6, 1925.

A. M. Torbit, Gough, Ga.; University of Georgia Medical Department, Augusta, 1887; member of the Medical Association of Georgia; aged 66; died, Dec. 24, 1925.

Zack L. Biggs, Trenton, Tenn.; University of Nashville Medical Department, 1856; Civil War veteran; aged 93; died, Dec. 16, 1925, of pneumonia.

Henry George Lackner, Kitchener, Ont., Canada; University of Toronto Faculty of Medicine, Toronto, 1876; aged 74; died suddenly, Dec. 4, 1925.

Stephen E. Luckett, Evansville, Ind.; University of Louisville (Ky.) School of Medicine, 1893; died, Dec. 13, 1925, at Chicago, of heart disease.

James W. Gore, Reisterstown, Md.; University of Maryland School of Medicine, Baltimore, 1867; aged 79; died, Dec. 23, 1925, of senility.

George Watt Gallagher ✠ Connellsville, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1889; aged 64; died, Dec. 16, 1925.

Francis Edwin Melugin ✠ Thomson, Ill.; Long Island College Hospital, Brooklyn, 1879; Civil War veteran; aged 79; died, Dec. 23, 1925.

Frank E. Pilcher ✠ Detroit; Detroit College of Medicine and Surgery, 1891; aged 64; died, in December, 1925.

Frank Paschal ✠ San Antonio, Tex.; Louisville (Ky.) Medical College, 1873; aged 76; died, Dec. 20, 1925.

George Asa Birdsall ✠ Fairbury, Neb.; Rush Medical College, Chicago, 1887; aged 60; died, Dec. 17, 1925.

David Hubbard Camak, Jasper, Ala. (licensed, Alabama, 1884); aged 75; died suddenly, Dec. 10, 1925.

Alfred R. Funke, St. Louis; American Medical College, St. Louis, 1893; aged 51; died, Dec. 16, 1925.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

LOESER'S INTRAVENOUS SOLUTION OF CALCIUM CHLORIDE AND LOESER'S INTRAVENOUS SOLUTION OF SODIUM THIOSULPHATE—AN EXPLANATION

Report of the Council on Pharmacy and Chemistry

The Council has authorized publication of the following report.

W. A. PUCKNER, Secretary.

The Council examined the claims made for Loeser's Intravenous Solution of Calcium Chloride and Loeser's Intravenous Solution of Sodium Thiosulphate on account of inquiries received. The preparations were found ineligible for inclusion in New and Nonofficial Remedies because they were marketed with claims that were misleading and, therefore, unwarranted. Reports of the consideration of these preparations were published (THE JOURNAL, March 21, 1925, p. 914; April 25, 1925, p. 1289).

The New York Intravenous Laboratory has objected to the Council's reports. It particularly resents that part of the headings of these reports that declare the products "Not Accepted" for New and Nonofficial Remedies. The firm holds that as it did not request consideration of the products which are the basis of the reports, the term "Not Accepted" is incorrect.

The New York Intravenous Laboratory has not adduced any facts that were not considered in the report itself. The phrase "Not Accepted" is perfectly correct, for the derivation of the word "accept" shows that it does not necessarily assume an offer. The term "Not Acceptable," however, is a better caption, because it is not open to a double interpretation. Since the New York Intravenous Laboratory expresses the belief that readers of the reports may be led to assume that it had requested the Council to consider these preparations, the Council directed publication of this statement to explain that the firm did not take this step.

MEDICAL MAIL ORDER FRAUDS

The Postal Authorities Bar Three Quack Concerns From the Mail

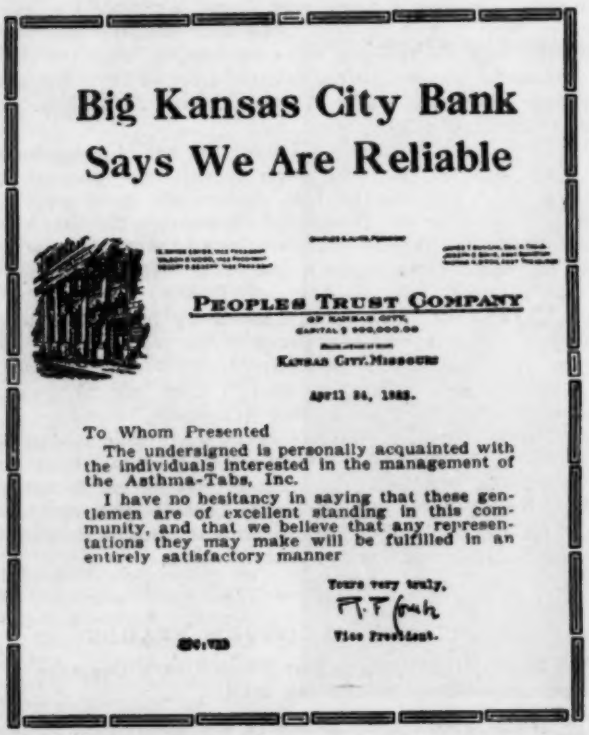
The postal authorities continue to do good work in protecting the public from the wiles of the medical swindler who would use the United States mails in carrying on his business. A piece of asthma cure quackery and two lost manhood fakes have recently had their activities curbed by the issuance of a fraud order.

ASTHMA-TAB LABORATORIES

As long ago as Sept. 27, 1924, THE JOURNAL exposed the fraudulent pretences of the Asthma-Tab Laboratories, Inc., of Kansas City, Mo. Now the government has declared it a fraud and closed the United States mails to it. THE JOURNAL's article brought out the facts that the business was established as a partnership in 1922 and was incorporated in February, 1924, by the former partners; that the men behind the concern were T. N. Roby, said to be connected with the Roby Printing Company of Kansas City, A. W. Slattery, an advertising manager for a concern that sells women's apparel, C. W. Sydenstricker, a contractor, and F. W. Osborne, who acted as general manager, and that the address of the Asthma-Tab Laboratories, Inc., was the same as that of the Roby Printing Company. It was also stated in the article that much of the Asthma-Tab advertising directed the public to write to "R. N. Townley," although THE JOURNAL questioned whether there was such a man. It was pointed out further that part of the "come-on" advertising was the reproduction of a letter purporting to be on

the stationery of the Peoples Trust Company of Kansas City, and to have been written by the vice president of that bank, one R. Pryor Combs. It was further shown that examination of Asthma-Tabs in the Association's Laboratory brought out the fact that the stuff was essentially potassium iodide and arsenic trioxide.

Judge Horace J. Donnelly, solicitor for the Post Office Department, in his memorandum to the Postmaster General, recommending the issuance of a fraud order, declares that when these quacks were cited to show cause why they should not be debarred from the mails, F. W. Osborne and T. N. Roby appeared in Washington, accompanied by their attorneys, Messrs. E. E. Gann and George Elliott. The memorandum brings out further that the various individuals running this fraudulent business also had other business connections, Osborne being a partner of Edward H. Manke in the Manke-Osborne Advertising Agency and also president of another mail-order concern which was under investigation by the federal authorities. The memorandum states also that the gross business of the Asthma-Tab fakery was $80,000 a


Big Kansas City Bank
Says We Are Reliable
PEOPLES TRUST COMPANY
KANSAS CITY, MISSOURI
To Whom Presented
The undersigned is personally acquainted with the individuals interested in the management of the Asthma-Tabs, Inc.
I have no hesitancy in saying that these gentlemen are of excellent standing in this community, and that we believe that any representations they may make will be fulfilled in an entirely satisfactory manner
Yours very truly,
Vice President.

Finance, as well as politics, makes strange bedfellows. Here again it is demonstrated that successful quackery can secure the endorsement of presumably respectable banking institutions.

year, of which approximately one half was spent for advertising—the share that newspapers and magazines got for helping this concern swindle the public. The Asthma-Tab concern had about twenty employees, but no physicians, chemists or pharmacists. Quoting from the Memorandum: "The concern has no laboratories, as the name implies, but purchases its medicine from Sharp and Dohme and Eli Lilly, manufacturing chemists." Osborne admitted at the hearing that the nostrum contained potassium iodide, 5½ grains, and Fowler's solution, 1 minim to each tablet, with a filler that varied according to whether it was made by Sharp and Dohme or Eli Lilly. It advertised in about one hundred papers throughout the country, and placed the advertising through the Manke-Osborne Advertising Company — thus demonstrating again the unholy alliance between certain advertising agencies and fraudulent quacks. The "R. N. Townley, president," to whom the public was urged to write and whose existence THE JOURNAL in its original article doubted, was purely fictitious. It was, in fact, the name of Townley N. Roby, with the first name put last and the last two initials reversed.

The government in its investigation found that the claim made by the concern that it would refund without question or quibble money paid by the patient who was not satisfied was also false. In fact, the company had two form letters with which they attempted to "jockey" the victims who demanded their money back. In short, the government proved conclusively that the Asthma-Tab outfit was a fraud from start to finish, and solicitor Horace J. Donnelly recommended that a fraud order be issued against it. It was issued, Dec. 12, 1925.

PERFECTION DEVELOPER

The device advertised as the "Perfection Developer," put out by one Walter H. Hartman of Columbus, Ohio, who did business under the name of Hart and Company, was sold under the claim that it would "restore lost manhood, relieve stricture, varicocele, stop night emissions and restore shrunken organs to full size." The device, as is common in fakes of this sort, was a cylinder of glass, fitted at one end with a piece of rubber for making the tube air-tight when it was pressed against the body, and had a small pump attached for the purpose of exhausting the air when the instrument was in use. The thing was in effect nothing but a mechanical masturbator. Judge Horace J. Donnelly, solicitor of the Post Office Department, after hearing the evidence in the case, recommended that a fraud order be issued against Hart and Company. This was done, Dec. 5, 1925.

BURT VACUUM TUBE

Another device similar in every respect to the one just described was the Burt Vacuum Tube, sold by M. von Schwartz and William Billings of Ithaca, New York, who operated under the trade name B. & V. S. Manufacturing Co. Solicitor Donnelly recommended the issuance of a fraud order against the concern, and it was debarred from the mails, Sept. 1, 1925.

Correspondence

ARTERIOSCLEROSIS

To the Editor:—After careful reading of the papers in THE JOURNAL, Nov. 28, 1925, by those who took part in the symposium on vascular and renal disease at the Atlantic City session, I am confused as to the definition of the term arteriosclerosis, so frequently used. Apparently the authors do not all use this word in the same sense. The criteria for diagnosis are clinical, obtained by palpating the available superficial arteries and by measuring the blood pressure. The theories, however closely reasoned and deduced from observation, are nevertheless based on individual opinion of the thickness of palpable arteries and the course of the patients' condition under various forms of treatment. These are well recognized methods of clinical research, yet they are open to considerable objection and can hardly be used to develop anything more than a pure theory.

It is not my intention to develop a theory but to direct attention to certain observations which have some factual basis.

In the first place, I called attention some years ago (*Am. J. M. Sc.* **154**:414 [Sept.] 1917) to a grouping of the cases of high blood pressure which seemed to simplify the question and to offer a basis for handling patients more intelligently. The classification concerned only the cardiovascular renal hypertension cases. In brief: Group 1. The arteriosclerotic hypertension: large, tortuous, thick arteries; large heart, especially the left ventricle, and a comparatively low diastolic pressure, usually around 100 mm. of mercury. No kidney signs or symptoms. Group 2. Chronic interstitial nephritic hypertension: now including the modern nomenclature, chronic glomerular nephritis and Volhard's nephrosclerosis. What are also called secondary and primary contracted kidney. Here the diastolic pressure is high as well as the systolic pressure. The renal element is the more important,

and this group is the true cardiorenal disease. The urine has the well known characteristics; kidney function is decreased; the nonprotein nitrogen of the blood is increased. Group 3. Essential hypertonia. Distinctly hereditary, no kidney lesions clinically demonstrable; may begin rather early in life in the third decade, lasts for years, and has a blood pressure of both high systolic and high diastolic pressures.

Group 1 reveals little or no generalized arteriolar spasm, as the peripheral resistance is not more increased than would be predicted by the considerable hypertension. On the contrary, groups 2 and 3 reveal beyond question, at least to my mind, the evidence of generalized increased peripheral resistance shown by the unusually high diastolic pressure.

What do the authors mean by arteriosclerosis? Do they mean the intimal lesions that occur only on the aorta or its primary branches, which is probably better designated as atherosclerosis? This condition is far from being accompanied in all cases by increased blood pressure during life. Do they mean the medial lesion described years ago by Moenckeberg and known generally by his name, a lesion confined to the media of the medium sized and smaller arteries in which some smooth muscle fibers are found? Do they mean the intimal proliferation and occasional medial thickening in the small arteries of the kidney, for example, which are known as endarteritis obliterans? Or do they mean the actual thickening of the media by fibrous tissue and what often appear to be increased numbers of smooth muscle fibers in the middle coat of the arterioles? In other words, the term arteriosclerosis is loosely used and has different concepts to different individuals.

Some of these lesions are found at the postmortem table, but unfortunately not all are found uniformly enough in cases in which there was increased blood pressure during life to enable us to group the effects and causes definitely.

Some are rather well defined. So-called senile arteriosclerosis has a combination of atheroma and Moenckeberg's degeneration. The kidney is scarred and atrophic. The blood pressure is not increased; on the contrary, it is more apt to be low. A combination of Moenckeberg's degeneration with fibrosis of the arterioles is, in my experience, found in the group of arteriosclerotic hypertension. My cases of this group have been very largely in former athletes who have led for years a sedentary life, have eaten and drunk too much, and have become greatly overweight. Whether strain hypertrophy (Adami) causes the initial medial lesions or toxins cause it or both are debatable questions which are far from being settled. In group 2 there is always endarteritis obliterans of the kidney arterioles. It is an open question whether this rather widespread decrease of the arterial bed of the kidneys secondarily produces left sided cardiac hypertrophy or not. More likely the cardiac hypertrophy follows a generalized vasoconstriction and not alone the narrowing of the arterial bed in any one organ, however important that organ may be as an excretory pathway for substances which the body must get rid of. There is an analogy in the marked fibrosis and intimal sclerosis which Moschcowitz has described (THE JOURNAL, Oct. 7, 1922, p. 1196). However, it seems that one must predicate a more widespread arteriolar contraction, or, as Krogh thinks (The Anatomy and Physiology of Capillaries, Yale University Press, 1922) a capillary contraction, in order to produce the degree of increased blood pressure found during the life of such a patient. The fact that no widespread lesions of the finer branches of the arterial tree are found at necropsy naturally leads one to predicate a circulating poison which acts as a vasoconstrictor. Vasodilator drugs temporarily may reduce the pressure, and febrile states which are considered to cause vasodilatation also reduce the increased pressure both systolic and diastolic.

In group 3 there is no constant pathologic lesion of the arteries. Pal informs me that he has looked carefully for arterial lesions in all his cases of essential hypertonia; and although some patients have had the condition for years before death, no changes have been found. Occasionally there seems to be thickening of the media of the arterioles due to increased smooth muscle fibers. About such a change it is difficult to be sure. Comparison with a known normal arteriole in the same subject is necessarily impossible. We are therefore thrown back on functional spasm as the cause of the vascular syndrome. This, however, is no real explanation, but it is the best we have at present.

It is useful to make a distinction between hypertonia and hypertension. In hypertonia the palpable arteries are hard and cordlike when the blood is pressed out of them. The artery feels in spasm. It is uniformly thickened, and feels like a piece of smooth cord. In hypertension, the artery may or may not be felt. If it is physiologic hypertension, as after exercise, it is not felt. If it is arteriosclerotic hypertension (group 1), it can be felt, but is nodular, irregular and tortuous. Hypertonia includes hypertension, but hypertension can occur without hypertonia. Using this definition, so-called essential hypertension becomes essential hypertonia, the term actually in common use among continental clinicians. Group 2 also is hypertonia with the added, frequently found, medial fibrosis.

The work of Newburgh and Marsh on experimental atherosclerosis should not be looked on as proved. They have found some atheromatous lesions in rabbits' aortas which resemble those of man. However, the lesions are far from being constantly produced, and rabbits, as has been known for some time, have spontaneous lesions in the aorta. McLean of London has told me that he failed entirely to confirm the protein-feeding experiments.

If there is any merit in what has been said above, would it not be in the interest of clarity to confine the unmodified term arteriosclerosis to the group 1 cases? In the minds of most men, arteriosclerosis connotes hypertension. This is true to only a limited extent. One might be talking about the atheroma of the aged. If arteriosclerosis is the term to be used in designating a condition characterized pathologically by thickened arteries and increased systolic blood pressure, then care should be used when speaking of the senile form always to call it senile.

LOUIS M. WARFIELD, M.D., Milwaukee.

AUSCULTATORY SIGN IN UREMIA

To the Editor:—I desire to call brief attention to an auscultatory sign in cases of uremia, more particularly when this condition is secondary to chronic interstitial nephritis. The sign is an unusual dryness and harshness of the breath sounds to auscultation. This sound is more or less masked when edema of the lungs is present, as would be obviously supposed. I have no satisfying explanation to offer for the sign, although it may be safely inferred that it is in some manner, not as yet understood, dependent on the presence of retained excrementitious products. It is highly probable that the corresponding anatomic lesion is merely intense dryness of the bronchial mucosa and also that of the air cells. Dryness of the mucous membrane of the mouth and throat is much complained of, as a rule, by patients who manifest the sign.

I have frequently pointed out this sign to medical students and hospital interns, at the bedside of sufferers from uremic toxemia. So far as I know, I was the first to discover and call attention to it in connection with uremia. I have recently been informed by Dr. Alfred Stengel, to whom I had many years ago pointed out the auscultatory sign in question, that he has been able to confirm my observations in this respect.

JAMES M. ANDERS, M.D., Philadelphia.

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

GLASS PERMEABLE TO ULTRAVIOLET RAYS

To the Editor:—In a recent issue of The Journal I noticed among the English items a report that three sorts of glass had been exhibited at a medical meeting and that one of these was permeable to the ultraviolet rays. In another place, I saw a reference to a "vita glass" that was said to have the same property. Would you kindly advise me as to whether this glass is suitable for use in the place of the quartz in the mercury vapor lamps? Also, kindly give some idea as to the market price at which the glass is quoted. Is there any sort of incandescent lamp on the market made with a glass that is permeable to the ultraviolet light rays?

B. H. Haynes, M.D., St. James, Minn.

Answer.—From time to time various reports have been published by industrial concerns, especially in England, that glass highly permeable to ultraviolet light was now being manufactured. These glasses apparently are possessed of this property by virtue of the fact that they contain a very high proportion of quartz. This increases the difficulty with which they are worked, necessitating a higher temperature and therefore correspondingly increasing the cost. One of the glasses manufactured is known as "vita" glass. According to a circular put out by the manufacturers, F. E. Lamplough, 47 Bunbury Road, King's Norton, Birmingham, England, this glass at a thickness of 2 mm. transmits ultraviolet rays of as short wave length as 270 millimicrons. As sunlight does not contain any rays shorter than 290 millimicrons, it appears to be well able of transmitting the antirachitic solar rays. There seems to be no reason why this glass could not be used for the manufacture of mercury vapor burners. It does not represent the first attempt to make glass which transmits the shorter light waves. Years ago the Jena Glass Works put out a glass known as Uviol glass for this purpose. Like "vita" glass it also possessed the power to transmit the ultraviolet rays to a considerable degree. The difficulty comes in that consideration must be given not only to the qualitative nature of the transmitted light but also to its quantitative character. Furthermore, many materials when submitted to the high temperature that prevails in the mercury vapor lamp will undergo deterioration. This is true even in the case of quartz itself. Even after a few hours' run the transmission of the very short untraviolet rays by the quartz of a new burner is materially lessened. It is difficult, therefore, to state whether or not it would be justifiable to use this glass for the purpose mentioned. Economically, the objections to its use are not great because it is sold at a price of four shillings per square foot for cathedral glass and five shillings for clear glass.

Incandescent lamps made of these new glasses are apparently not yet being produced commercially.

MANOLA—HYMOSA—PHYTOLINE—SUCCUS CINERARIA

To the Editor:—Enclosed please find a pamphlet put out by the Walker Pharmacal Company and the Manola Company. I find numerous mention of their products in Nostrums and Quackery. One would hardly expect them to detail the physician with such preposterous remedies. Are we progressing or retrogressing? I believe some mention of this should be made in The Journal for the protection of some of our gullible brethren.

A. R. Ellison, M.D., New York.

Answer.—The pamphlet referred to is the December, 1925, number of *Medical Suggestions,* issued by the Walker Pharmacal Company and the Manola Company, which, according to our information, are subsidiaries of the Luyties Pharmacal Company, St. Louis. The publication contains articles which are more or less thinly disguised puffs for the products sold by these companies together with testimonials from physicians who say they have used them. Most of the preparations have been commented on in The Journal. Manola is exploited as a "tonic, reconstructive, and tissue builder." The Chemical Laboratory of the A. M. A. found it to be "nothing more than wine, fortified with alcohol and a slight amount of medicinal substances added" (The Journal, April 2, 1910, p. 1154). The formula at present published by the manufacturer, however, indicates the presence of 1/120 grain of strychnine phosphate and 1/4 minim of solution of potassium arsenite in the maximum recommended dose. This would appear to take Manola out of the class of homeopathic nostrums, but certainly does not justify the promiscuous use advocated in the present circular. Hymosa was found to be essentially a solution of salicylates exploited as a remedy for rheumatism, etc., because it was free of salicylates (The Journal, June 11, 1910, p. 1955). Phytoline is a preparation of pokeberry juice advertised as a "Powerful Anti-Fat." Succus Cineraria Maritima (Walker) is recommended for use in cataract by the Walker Chemical Company, which in 1916 pleaded guilty to the charge brought under the Food and Drugs Act that the claims for this nostrum were false and fraudulent. The claims are still made; but not on the label or in the package (The Journal, Dec. 20, 1924, p. 2041).

A change in the merchandising policy of the Manola Company is noted. Whereas they formerly gave three bottles to the physician who induced his druggist to order a dozen (Physicians as Unpaid Peddlers of Nostrums, The Journal, April 5, 1913, p. 1092), a form letter reproduced in the present pamphlet offers only two 4 ounce samples free, with the statement that "We cannot promise to repeat this offer in the near future."

IMMUNIZATION TO SCARLET FEVER

To the Editor:—How long does the immunity to scarlet fever last after the injection of a single prophylactic dose of Dick's scarlet fever antitoxin? If the immunity lasts, say, six weeks, may the prophylactic dose be safely repeated every six weeks? Please omit my name and address.

M.D., Tennessee.

Answer.—The passive immunity conferred by any antitoxic serum cannot be depended on to last more than three or four weeks.

Since scarlet fever antitoxin, like other antitoxic serums, is obtained from horses, it would not be safe to repeat the dose every six weeks because of the danger of sensitizing to horse serum and the possibility of anaphylactic reactions.

When a more lasting protection is desired, after passive immunization with the antitoxin, the best procedure is to begin active immunization with scarlet fever toxin two weeks after the prophylactic dose of antitoxin has been given.

TREATMENT OF "SOFT CORNS"

To the Editor:—Please send me treatment that works for soft corns between the toes. It seems strange to me that we cannot do anything for soft corns.

Bennett A. Braude, Johnstown, Pa.

Answer.—In order to understand the treatment for soft corns, it is important to realize that soft corns can occur only between the toes, usually between the fourth and fifth, and that the conditions necessary are: (1) contiguity of skin surfaces; (2) moisture, and (3) heat. There is often a sinus present, and usually a fetid odor. Simple chiropody of itself is usually not curative. The various points under treatment are as follows:

A proper, straight last, medium shank, round toe shoe; into these shoes a small felt pad, exerting pressure behind the heads of the metatarsal bones; special exercises to strengthen the supporting structures of the metatarsal arch; a simple dusting powder between the toes three or four times a day; the preparation of a stocking, making a stall for the fifth toe, as a thumb in a mitten; roentgen-ray therapy; radium therapy; operation, consisting of excision of the soft corn and the sinus, if present, and the removal of a bony spur from the phalanx, which may be present and often is the cause of the soft corn.

INCARCERATED UMBILICAL HERNIA

To the Editor:—Please tell me the best treatment for umbilical hernia in a young infant. Is there anything newer or better than pressure with a hard round piece of material (for instance, a button mold), held on by adhesive plaster? Please do not print my name or address.

M.D., Missouri.

Answer.—In children under 2 years of age, incarceration is extremely rare and nonoperative treatment is the rule. Reduction and fixation are accomplished in the following manner: The hernia is reduced with the left index finger, while with the left thumb and middle finger the adjacent abdominal wall is picked up in two folds. Then, with the right hand a wide strip of zinc oxid adhesive plaster is applied to hold the hernia reduced. This adhesive strip should reach from one axillary line to the other. In changing the adhesive, the skin should be cleaned with ether before the new strip is applied, in order to guard against skin irritation, and it is best to place the next strip obliquely so as to avoid the same skin area so far as possible.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALASKA: Juneau, March 2. Sec., Dr. Harry C. De Vighne, Juneau.
CALIFORNIA: Los Angeles, March 8-11. Sec., Dr. Charles B. Pinkham, Room 906, Forum Bldg., Sacramento.
CONNECTICUT: Basic Science Board, New Haven, Feb. 13. Chairman, Mr. Charles M. Bakewell, Box 1895, Yale Station, New Haven. Regular Board, Hartford, March 9-10. Sec., Dr. Robert L. Rowley, 79 Elm St., Hartford. Homeo. Board, New Haven, March 9. Sec., Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven.
ILLINOIS: Chicago, Jan. 19-21. Supt. of Reg., Mr. V. C. Michels, Springfield, Ill.
KANSAS: Topeka, Feb. 9. Sec., Dr. Albert S. Ross, Sabetha.
MAINE: Portland, March 9-10. Sec., Dr. Adam P. Leighton, Jr., 192 State St., Portland.
MASSACHUSETTS: Boston, March 9-11. Sec., Dr. Frank M. Vaughan, 144 State House, Boston.
NATIONAL BOARD OF MEDICAL EXAMINERS: Part I, Feb. 10-12; Part II, Feb. 11-12, in Class A Medical Schools. All applications must be received on or before Jan. 15. Sec., Dr. J. S. Rodman, 1600 Walnut St., Philadelphia.
NEW HAMPSHIRE: Concord, March 11-12. Sec., Dr. Charles Duncan, Concord.
NEW YORK: Albany, Buffalo, New York, Syracuse, Jan. 25-28. Chief, Mr. Herbert J. Hamilton, Department of Education, Albany.
OKLAHOMA: Oklahoma City, March 9-10. Sec., Dr. J. M. Byrum, Shawnee.
PENNSYLVANIA: Philadelphia, Jan. 26-30. Act. Sec., Mr. C. D. Koch, Harrisburg.
PHILIPPINE ISLANDS: Manila, Feb. 9. Sec., Dr. Jose V. Gloria, 686 Rizal Ave., Manila.
PORTO RICO: San Juan, March 2. Sec., Dr. D. Biascoechea, Box 804, San Juan.
SOUTH DAKOTA: Pierre, Jan. 19. Dir. Med. Licensure, Dr. H. R. Kenaston, Bonesteel, S. D.
VERMONT: Burlington, Feb. 9-11. Sec., Dr. W. Scott Nay, Underhill.
WASHINGTON: Olympia, Jan. 12. Sec., Mr. William Melville, 15 Insurance Bldg., Olympia.
WEST VIRGINIA: Charleston, Jan. 19. Sec., Dr. W. T. Henshaw, State Health Department, Charleston.
WYOMING: Cheyenne, Feb. 1-3. Sec., Dr. G. M. Anderson, Cheyenne.

New Jersey October Examination

Dr. Alexander MacAlister, secretary of the New Jersey Board of Medical Examiners, reports the written examination held at Trenton, Oct. 20-21, 1925. The examination covered 9 subjects, and included 90 questions. An average of 75 per cent was required to pass. Of the 26 candidates examined, 21, including 4 osteopaths, passed; 3 failed, and 1 withdrew from the examination. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent
Georgetown University School of Medicine		(1924)	86.7
Howard University School of Medicine		(1924)	77.9, 84.7
University of Maryland School of Medicine		(1924)	82.8
Tufts College Medical School		(1923)	87
Columbia Univ. College of Physicians and Surgeons		(1924)	86.4
University of Pennsylvania School of Medicine		(1924)	87.8
Licentiate of the Royal College of Physicians, Ireland		(1920)	80.4
University of Budapest, Hungary		(1890)*	75.2
University of Naples, Italy		(1920)*	75, (1921)* 75.1
University of Kharkov, Russia		(1912)*	83.1
University of Odessa, Russia		(1915)*	76.9, (1921)* 83.2, (1922)* 75.1, 75.3
University of St. Vladimira, Kief, Russia		(1917)*	75
Osteopaths			75.1, 76.3, 79.1, 84.1

College	FAILED	Year Grad.	Per Cent
University of Havana, Cuba		(1921)*	63.3
University of Naples, Italy		(1902)*	68.4
University of Odessa, Russia		(1917)*	62.9

* Verification of graduation not completed by the American Medical Association.

Massachusetts July Examination

Dr. Frank M. Vaughn, secretary of the Massachusetts Board of Registration in Medicine, reports the oral, written and practical examination held at Boston, July 14-16, 1925. The examination covered 17 subjects and included 170 questions. An average of 75 per cent was required to pass. Of the 153 candidates who took the physicians' and surgeons' examination, 106, including 11 osteopaths, passed, and 47, including 19 osteopaths, failed. Two candidates were licensed by endorsement of their credentials. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent
University of Colorado School of Med		(1917) 87.1, (1925)	84.6
University of Louisville School of Medicine		(1917)	75
Medical School of Maine		(1902)	75
Boston University School of Medicine		(1924) 76.1, (1925)	75, 75.1, 75.7, 76.3, 83.1, 83.6, 83.7, 83.8, 85.6, 87.2, 88.7
College of Physicians and Surgeons, Boston		(1925)	82.3, 86.8
Harvard University		(1921) 90.2, (1923)	83.7, 84.4, 85.7, (1924) 84.3, 88.8, (1925) 78.6, 81.4, 83.6, 83.8, 84.1, 84.8, 85.6, 87.4, 88.6, 90.2, 90.9
Middlesex College of Med. and Surg.		(1923) 79.6, (1924)	78.3
Tufts College Medical School		(1924) 81, (1925)	75.2, 75.9, 76.7, 77.2, 77.7, 78.5, 79.6, 79.7, 79.7, 80.1, 80.4, 80.7, 80.7, 80.9, 81.1, 81.4, 82.1, 82.5, 82.6, 82.6, 82.6, 82.8, 83.5, 83.6, 83.8, 84.3, 84.4, 84.5, 85.2, 85.2, 85.7, 86.2, 86.4, 86.5, 86.6, 86.8, 86.9, 87.3, 87.5, 87.5, 87.6, 88.5, 88.6, 88.8, 89.2, 89.5, 90
St. Louis College of Physicians and Surgeons		(1921)	75
		(1924) 75, (1925)	76.8
Albany Medical College, Albany		(1909)	75
University of Pennsylvania School of Medicine		(1909)	78.4
Dalhousie University Faculty of Medicine		(1924)	79.5, 81
McGill University Faculty of Medicine		(1922) 79.7, (1925)	80
University of Naples, Italy		(1914)*	79.7
Osteopaths			75.2, 75.6, 75.8, 76, 76.2, 76.8, 78.8, 79.9, 83.5, 84.3, 85.1

College	FAILED	Year Grad.	Per Cent
College of Phys. and Surgs., Boston		(1922) 66.5, (19.5)	74.5
Middlesex College of Med. and Surg., Cambridge		(1922)	63.4, (1923) 61.7, 63.2, 73.5, (1925) 65
St. Louis College of Physicians and Surgeons		(1922)	63.3, 67.4, 68.6, (1923) 56, 57.4, 71.5, 74.4, (1924) 50.2, 63.8, 73.8, (1925) 55, 73, 73.1
Meharry Medical College		(1921)	†
Laval University Faculty of Medicine, Quebec		(1925)	40.8
University of Montreal Medical Faculty		(1923)	69.3
National University, Athens, Greece		(1923)*	44.8
University of Naples, Italy		(1914)* 65.1, (1922)*	50.4
Donskey University, Rostoff on Don, Russia		(1920)*	70.6
University of Constantinople, Turkey		(1914)*	68.5
Osteopaths			52.6, 57.9, 58.1, 58.7, 59.8, 60.2, 60.8, 63.5, 63.6, 68.2, 68.5, 68.7, 69.9, 71.7, 72.5, 72.6, 73.3, 73.9, 74.6

College	ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
Harvard University		(1923)	N. B. M. Ex.
Jefferson Medical College of Philadelphia		(1919)	N. B. M. Ex.

* Verification of graduation not completed by the American Medical Association.
† No grade given.

Rhode Island October Examination

Dr. B. U. Richards, secretary of the Rhode Island Board of Health, reports the written and practical examination held at Providence, Oct. 1-2, 1925. The examination covered 7 subjects and included 70 questions. An average of 80 per cent was required to pass. Of the 6 candidates examined, 5 passed and 1 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent
Tufts College Medical School		(1924)	89.8
Washington University School of Medicine		(1912)	95.4
Jefferson Medical College of Philadelphia		(1923)	89.3
University of Budapest, Hungary		(1919)*	85.1
University of Paris, France		(1925)*	82.4

College	FAILED	Year Grad.	Per Cent
University of Naples, Italy		(1923)*	75.2

* Verification of graduation by the American Medical Association still incomplete.

Oklahoma September Examination

Dr. J. M. Byrum, secretary of the Oklahoma Board of Medical Examiners, reports the written examination held at Oklahoma City, Sept. 8-9, 1925. The examination covered 12 subjects and included 120 questions. An average of 75 per cent was required to pass. Three candidates were examined and all of them passed. Ten applicants were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent
Oklahoma University School of Medicine		(1924)	92, 92, 93

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
University of Arkansas Medical Department		(1896)	Texas
American Medical Missionary College, Chicago		(1903)	Kansas
University of Kansas School of Medicine		(1922), (1924)	Kansas
St. Louis University School of Medicine		(1909), (1925)	Missouri
University of Cincinnati College of Medicine		(1912)	Ohio
University of Pittsburgh School of Medicine		(1925)	Texas
University of Nashville Medical Department		(1910)	Mississippi
University of Tennessee College of Medicine		(1924)	Mississippi

Missouri October Examination

Dr. James Stewart, secretary of the Board of Health of Missouri, reports the written and practical examination held at Kansas City, Oct. 27-30, 1925. The examination covered 14 subjects and included 133 questions. An average

of 70 per cent was required to pass. Twenty-two candidates were examined and all of them passed. The following colleges were represented:

College	Year Grad.	Number Passed
PASSED		
University of Colorado School of Medicine	(1925)	1
Howard University School of Medicine	(1925)	1
Bennett Medical College, Chicago	(1913)	1
Northwestern University Medical School	(1924), (1925)	2
Rush Medical College	(1925)	1
University of Illinois College of Medicine	(1925)	1
University of Kansas School of Medicine	(1923), (1924)	2
University of Louisville School of Medicine	(1905)	1
University of Michigan Medical School	(1923)	1
Ensworth Medical College, St. Joseph	(1910)	1
St. Louis University School of Medicine	(1925)	1
Washington University School of Medicine	(1925)	3
Creighton Medical College	(1924)	1
University of Cincinnati College of Medicine	(1920)	1
University of Pennsylvania School of Medicine	(1925)	2
Baylor University College of Medicine	(1925)	1
McGill University Faculty of Medicine	(1924)	1

Book Notices

THE ART AND PRACTICE OF MEDICAL WRITING. By George H. Simmons, M.D., Editor and General Manager Emeritus, American Medical Association, and Morris Fishbein, M.D., Editor, The Journal of the American Medical Association. Cloth. Price, $1.50. Pp. 163, with 21 illustrations. Chicago: American Medical Association, 1925.

John Drinkwater began a review recently with "I must be honest about this." It was not a particularly brilliant review, but that sentence recurred to the reviewer of this book when it came to his attention; and he approached his task with a determination to live up to Drinkwater's position if the heavens fell. He did not breathe a sigh of relief, but he did not feel any worse when he had carefully gone through the book and realized he could be honest about it and still retain the highly esteemed friendship of its authors. It is a good book. It has the peculiar virtue, which is agreeable and not too common, of representing the matured judgment of men who have had large experience in the things they are writing about. It is really a book on the art of preparing medical papers for publication. The first two chapters, on style and words, are brief considerations of the subject of composition and rhetoric. The guidance here is altogether wise and could be profitably taken to heart by nearly all medical writers. It would be interesting and probably very instructive if the authors had given us much more on this subject. With this exception, the work is a handbook on the preparation of manuscripts: the characteristics of acceptable papers and the technical details of the preparation of papers, even to such subjects as the preparing of illustrations and the making of bibliographies. Throughout, the work has the characteristics of a manual of usages of a publishing house which through large experience has arrived at a working philosophy of style and form. Dr. Simmons and Dr. Fishbein have performed a useful service in preparing this manual of medical writing, and they have done well to consider the subject from the editorial point of view. We have some good books on the art of medical writing, such as Sir Clifford Allbutt's "Notes on the Composition of Scientific Papers." There is no other book, however, which considers the subject in the practical way that this does. The work is commended to medical writers by the reviewer—who happens to be an editor in a small way—with an insistence that amounts almost to religious enthusiasm. Any one who has to read the manuscripts submitted by many men, even of light and leading, would be inclined to start a subscription for a fund to place a book like this one in the hands of all medical writers. Good medical writing, like everything else good, requires care and knowledge of how to do it. One does not have to be a stylist—heaven forbid—but he does have to live up to certain principles and certain practices, if his articles are to be a credit to him and a satisfaction to his readers. In order to produce such manuscripts, we know no directions so good as those given in this practical handbook of the art and practice of medical writing.*

* This volume reviewed especially for THE JOURNAL by Dr. William Allen Pusey.

DISEASES OF THE NOSE, THROAT AND EAR, MEDICAL AND SURGICAL. By William Lincoln Ballenger, M.D. Revised by Howard Charles Ballenger, M.D., Otolaryngological Staff, Evanston Hospital. Fifth edition. Cloth. Price, $10. Pp. 1080, with 583 illustrations. Philadelphia: Lea & Febiger, 1925.

This volume is the same size as in the previous edition, but a number of changes have been added to the text incorporating newer development, especially on the subject of hyperesthetic rhinitis and the labyrinth. In the operative work, the new Lautenschlager and Halle operations are described. The nose and accessory sinuses are dealt with in the first part of the book, and the anatomy and physiology are first considered. A chapter on office equipment gives in considerable detail a description of the necessary furniture and other apparatus. The various phases of the diseases of the nose and nasal accessory sinuses are presented with considerable detail, particularly with reference to the sinuses and their operative treatment. The second part of the work deals with the pharynx and fauces. The third part is devoted to diseases of the larynx, and the fourth part to the ear. There are numerous illustrations, the operative work being especially well illustrated. Whether some of the newer measures mentioned will be of value, only the future can tell. The effort of the author has apparently been to review and include the whole field, although some of the features have not yet stood the test of time. While there is not much of an original nature embodied by the editor in this last edition, the work as a whole is comprehensive and will no doubt prove of considerable value to the practitioner of otolaryngology.

TEXT BOOK OF ORTHOPEDIC SURGERY FOR STUDENTS OF MEDICINE. By James Warren Sever, M.D., Assistant Orthopedic Surgeon, Children's Hospital, Boston. Cloth. Price, $4.50. Pp. 353, with 199 illustrations. New York: Macmillan Company, 1925.

This was written for the medical student and serves as an introduction to the subject of orthopedic surgery. The author believes that orthopedic textbooks in general leave the student confused. He has therefore written the book with the thought of presenting the subject briefly and didactically. He has endeavored to employ simple terms. Few references to the literature are given, and standard procedures of treatment are emphasized. In a few instances, as on the subjects of obstetric paralysis, shoulder disability and apophysitis of the os calcis, more detailed discussion is given. It is to be regretted that under the subject, "Congenital Dislocation of the Hip," no maneuvers are given. Figure 13 reveals a serious mistake by the artist, which was not corrected by the author; in figure 17 the ears are included in the head cast. The discussion on obstetric paralysis reveals the well known authority of the author, whose operation for this deformity is classic. The discussion of the nursing care of orthopedic cases is commendable.

EKZEM UND URTIKARIA. Klinik, Pathogenese und Therapie. Von Dr. Erwin Pulay. Paper. Price, 7.50 marks. Pp. 191. Berlin: Urban & Schwarzenberg, 1925.

Pulay bases his explanation of the pathogenesis of eczema and urticaria on modern experimental pharmacologic investigations. He considers eczema a vascular inflammatory reaction of the skin resulting from both exogenous and endogenous factors, requiring an "eczematous" receptive condition and a hypersusceptibility of the epidermis and sensory nerve endings. A specific hypersusceptibility to a definite stimulus he terms an idiosyncrasy, and finds that it is characterized by an absence of eosinophilia and a negative reaction to epinephrine, atropine and calcium administration. On the other hand, an anaphylactic eczema is characterized by eosinophilia, vagotonic symptoms, low calcium content of the blood and increased potassium and magnesium content. This type is favorably influenced by calcium and atropine administration. Only a small percentage of eczema and urticaria cases he finds based on idiosyncrasy or specific sensitization. He is particularly impressed by the importance of changes in the blood chemistry in the eczema group. He describes the clinical types of eczema produced by a disturbance of the carbohydrate and purine metabolism. He found the uric acid content of the blood abnormally high in many cases of eczema and pruritus. The occurrence of eczema in the obese as well

as in thin persons indicates a disturbed thyroid function. He stresses the importance of the mineral and fat metabolism, particularly the antagonistic rôle of calcium and potassium acting through the vegetative nervous system, together with changes in the electrolytic equilibrium and water content. Experimentally and clinically, he shows that eczema and urticaria can be produced hematogenously. Eczema results only when there has been a previous primary eczema, which in turn is brought on by exogenous factors, chiefly trauma and scratching. He considers pruritus as the most important clinical symptom of eczema, and believes that it is due as a rule to endogenous and hematogenous factors. The therapeutic discussion is complete and detailed. In contrast to many American writers, he finds that roentgenotherapy gives satisfactory results in only a small minority of cases. As a whole, one may say that Pulay has written a stimulating and instructive monograph on one of the most difficult chapters in dermatology.

PREVENTIVE MEDICINE. By Mark F. Boyd, M.D., M.S., C.P.H. Second edition. Cloth. Price, $4. Pp. 429, with 135 illustrations. Philadelphia: W. B. Saunders Company, 1925.

This edition of Dr. Boyd's book is very welcome. The author has evidently revised the first edition with unusual care and thoroughness, since corrections and additions appear with great frequency. A few of these may be noted. Recent work on immunization in scarlet fever and measles is described. The activated sludge process for sewage disposal is given increased consideration, and the section on water supply expanded. The chapters dealing with vitamins and dietary difficiency diseases are materially changed and improved. There is no doubt but that the usefulness of the book has been greatly increased by the revision, on account of the added information that it now contains and the better presentation of the material.

REPORTS OF THE ST. ANDREWS INSTITUTES FOR CLINICAL RESEARCH, ST. ANDREWS, FIFE. Vol. II. Cloth. Price, $3. Pp. 190, with 31 illustrations. New York: Oxford University Press, 1924.

This is not a large volume, but it contains several papers well worth study. They are of a higher order of merit than those of the first volume. Sir James Mackenzie writes of the reflex arc as related to cardiac signs, and of cellular and organic activity in relation to symptoms. Professor Herring has articles on the regulating and reflex processes, on the "law of fluctuation" in living tissues, and, with McNaughton, on observations on the lymphatics and lymph glands. Other topics treated include tremor in muscle, cardiac pain, sensory activities of the skin for touch and temperature, the normal infant's chest, and a clinical study of influenza. The subjects are of varied character, as is the manner of their treatment. At times, conclusions are reached that merely substitute a new hypothesis or explanation for an old one, yet without convincing proof. The volume as a whole, however, is stimulating and gives more promise than did the first that something worth while will come out of this school for clinical research, to which Mackenzie devoted his last and most earnest efforts.

LES SYNDROMES D'AORTITE POSTÉRIEURE (AORTITE THORACIQUE, AORTITE ABDOMINALE). Par Ch. Laubry, Médecin de l'Hôpital Broussais, A. Mougeot et J. Walser. Bibliothèque des grands syndromes. Directeur: H. Roger, Doyen de la Faculté de médecine de Paris. Paper. Price, 35 francs net. Pp. 234, with 29 illustrations. Paris: Gaston Doin, 1925.

Aortitis of the arch of the aorta is fairly well known pathologically and clinically. The aorta from the arch to the bifurcation is, to use the vivid wording of the authors, a region of mystery and silence. In this work are discussed the lesions of this, the posterior, portion of the vessel. Pathology, clinical features and differential diagnosis are carefully considered. Emphasis is laid on the value of the examination by means of the roentgen ray. Various clinical types are described. In fact, there is such a splitting up of the disease into varieties as to make the grouping seem artificial. The book is well written and presents in an interesting and detailed form a syndrome that is commonly treated only in a general way.

Medicolegal

Liability of Physician and of Railroad Company

(Borgeas v. Oregon Short Line R. Co. et al. (Mont.), 236 Pac. R. 1069)

The Supreme Court of Montana, in reversing a judgment that was rendered against the defendants (railroad company and physician) jointly, for $35,000 damages, remands the cause with direction to dismiss the action. The court says that the evidence disclosed that the plaintiff while in the employ of the company as a section hand had a fall backward, striking his hip against a tie. He continued in his employment for five or six weeks and then took sick leave, and a few days later, while he was walking on level ground carrying a pail of slop, the femur of his right leg broke. He was taken to the office of the defendant physician, who was a local physician of the company's, who told him to go to a hospital in Butte; he did not then know that the man was in the employ of the railroad company, and when informed by the man that he was in the employ of the company and wanted to go to Pocatello, Idaho, where the company had the services of a hospital, he still insisted that it was best for him to go to Butte. The man finally went voluntarily to the hospital in Butte, but after about ten days returned home. In his complaint he alleged that the railroad company deducted 75 cents a month from the wages of each employee to provide for the care of sick and injured employees, that the company had not supplied him with the means to pay for hospital services in Butte, and that on his return home, 20 miles from where the defendant physician was located, the latter refused to visit him.

As disclosed by the pleadings, this action was one in contract, for the breach thereof. While the defendant physician was in the employ of the defendant railroad company, he was not an "employee" in the ordinary sense of the term, as used in relation to master and servant or principal and agent. In the ordinary personal injury cases arising out of the negligent act or omission of an employee, the negligent employee may be joined with his employer in an action for damages, under the rule of respondeat superior (let the master answer). The act of the servant becomes the act of the master, who has the right to control the manner in which he discharges his duties, and, when injury results, they are joint tortfeasors (wrongdoers). But the relation of master and servant, or of principal and agent, does not exist between a railroad company as employer and a surgeon employed to treat an injured employee, the reason being that the employer has no right to control the surgeon in the treatment of the case, and the rule of respondeat superior does not apply in cases of such employment. Again, the plaintiff's contract, if any, was with the defendant company, and with this contract the defendant physician had nothing to do; whatever his contract with the company, there was no privity of contract between him and the plaintiff. If the defendant physician was liable in any manner to the plaintiff, it was for malpractice or carelessness on his part in the treatment of the plaintiff as a patient, either the company's or his own, in an action not arising out of the plaintiff's contract with the defendant company, and the two could not be joined, as was done in this case. It followed that the trial court erred in overruling the separate demurrer of the defendant physician.

If the defendant company, being in duty bound to furnish skilled and careful surgeons, by reason of lack of reasonable care in its selection, or the retention of a surgeon after it had been brought to the attention of the officers of the company that such a one through lack of skill or by reason of personal habits had become unfit to serve in that capacity, provided an injured employee with such unskilful or careless surgeon, then it would be liable for the carelessness or malpractice of the surgeon, and the allegation of damage therefrom might properly appear in the complaint. But practically the unanimous holding of the courts on the subject is that where an employer withholds from the wages of its employees a small monthly amount, with the aggregate of which it employs physicians and surgeons to treat such as become ill or

injured, and in doing so it is not promoting its own interest by making a profit out of such employment, such employer is not liable to an injured employee for the carelessness or malpractice of such physicians or surgeons in charge of the case, provided it has used reasonable care in its selection of such physicians or surgeons, since it will be regarded as merely administering a charity or trust fund.

It is the duty of one injured while in the employ of such an employer, if refused surgical attention and hospital accommodations, to secure the same elsewhere, and to hold his employer for the cost thereof.

No Penalty Increase of Medical and Hospital Claims

(Industrial Commission et al. v. Hammond (Colo.), 236 Pac. R. 1006)

The Supreme Court of Colorado says that, in this proceeding under the workmen's compensation act of that state to recover compensation for the death of an employee of a lessee of a sawmill, the compensation allowed by the industrial commission was increased 50 per cent on account of the failure of lessor and lessee to carry insurance, and the medical, surgical, hospital and undertaker's claims were likewise increased 50 per cent. These increases were made because section 27 of the act (laws of 1923, p. 736) provides that if an employer, subject to the terms of the act, carries no insurance, and one of his employees, who has not rejected the act as therein provided, is killed or injured, compensation may be claimed according to the terms of the act, "and in any such case the amount of compensation or benefits provided in this act shall be increased 50 per cent." But the court holds that the commission erred in this case in adding 50 per cent to the medical, surgical, hospital and undertaker's claims. Section 51, laws of 1919, p. 719, imposes on the employer the duty of furnishing medical, surgical, nursing and hospital treatment and supplies and apparatus for a fixed time and to a fixed minimum, regardless of the compensation allowed, and, when such bills are not paid, but are included in the award, they are paid direct to those who have rendered the service or furnished the supplies. In view of these facts, this court cannot construe the words "compensation or benefits," used in that portion of section 27 quoted, as including such expenses.

Action for Malicious Treatment Not Barred by Award

(Walker v. Von Wedel (Okla.), 237 Pac. R. 86)

The Supreme Court of Oklahoma says that, while the plaintiff was employed in a steam laundry, her right hand was severely injured by being caught in the machinery. She received medical treatment from the defendant, a physician in the employ of the laundry and of its insurance carrier under the workmen's compensation act. She subsequently brought this action to recover damages, alleging that, without her knowledge or assent, while she was unconscious under an anesthetic, the defendant forcibly bent the fingers of her hand backward and bandaged them on a board, after which her physical pain greatly increased and extended to and constantly affected her right hand and fingers, arm and shoulder, until some seven weeks after she was dismissed by the defendant she had the injured fingers amputated. She alleged further that the treatment by the defendant was done deliberately, with no thought of saving her from such suffering, but for the express purpose of preventing her from recovering the statutory award of the state industrial commission, against the insurance carrier, for the loss of a hand, which would have been greater than the award for the loss of fingers only, and that the treatment of the injury by the defendant was malicious and in utter disregard of his professional duty toward the plaintiff. The defendant answered that he gave the plaintiff conscientious, faithful, diligent and skilful treatment, which was successful, the plaintiff's condition yielding as fully to the treatment as could reasonably be expected. He also set up that the industrial commission had made an award to the plaintiff for the injuries received by her, and that she was thereby precluded from maintaining this action against the defendant. The plaintiff admitted that she received the award on account of the injury which she received while in the employ of the laundry. The defendant filed a motion for judgment on the pleadings, which motion was sustained and judgment rendered thereon for the defendant.

It might be probable that the plaintiff could not on the trial of this cause substantiate the facts alleged in her petition, but the supreme court is on this appeal by the plaintiff dealing only with the effect of the alleged acts of the defendant, as stated in the plaintiff's petition, as to her right to recover damages. On giving to the workmen's compensation act its full import as to its jurisdiction over an injured employee, this court is unable to construe such act as an inhibition against the employee's right of action against the physician whose acts are alleged to have been of a malicious nature and done solely for the purpose, as this plaintiff alleged, of protecting the employers from certain liability. Wherefore the judgment rendered is reversed, and the cause remanded.

It is true that in the ordinary treatment of injuries wherein an employee's disability is prolonged or accentuated by the unskilful and unprofessional acts of the physician, the employer who selects such physician is liable to the employee for such increased disability resulting from the acts of the physician in the ordinary course of treating the injury. But, where it is alleged that the acts of the physician in treating the patient were maliciously done with a wrongful intent of producing a condition seriously injurious to such patient, and such malicious acts were not within the contemplation of his employment, they are not in contemplation of the workmen's compensation act such as will preclude the patient from maintaining an action against the physician on account of such acts.

Right to First License When Second Revoked

(State ex rel. Fryberg v. Maybury (Wash.), 236 Pac. R. 566)

The Supreme Court of Washington, in granting a writ of mandate requiring the director of licenses of the state to surrender to the relator a limited license to practice drugless healing, says that the license had been returned to the director at the time that a full sanipractic license was issued to take its place. There was no contention that the limited license had not been lawfully and regularly issued, or that any proceeding to revoke it had been had. The order of revocation applied to the full sanipractic license alone, based on the ground that the diploma on which it had been issued was from an institution which it appeared had unlawfully issued diplomas to persons not entitled to them. But the effect of the revocation based on an unauthorized diploma could only destroy whatever rights had their foundation in it. Let it be illustrated thus: If one held a license to practice as a physician and the rules provided that on the presentation of that license and a diploma from any one of certain qualified colleges the applicant should be entitled to a license as a physician and surgeon, would it be contended that if one were so granted and it afterward developed that the diploma was unlawfully issued, or that the college did not have the required standard, the director could cancel the right to practice as a physician as well as surgeon? Manifestly not, for the right to practice as a physician was in no wise dependent on the authority of the diploma, and only that which had its basis in the diploma fell with it. That a license is not a contract is amply sustained by authority. But the right to practice is a valuable property right.

Society Proceedings

COMING MEETINGS

American College of Physicians, Detroit, Feb. 22-29. Dr. Frank Smithies, 920 N. Michigan Ave., Chicago, Secretary.

American Congress on Internal Medicine, Detroit-Ann Arbor, Feb. 22-29. Dr. Frank Smithies, 920 N. Michigan Ave., Chicago, Secretary.

Isthmian Canal Zone, Medical Association of, Ancon, Jan. 19. Dr. David L. Robeson, Ancon Hospital, Ancon, Secretary.

Sioux Valley Medical Association, Sioux City, Iowa, Jan. 19-20. Dr. R. F. Bellaire, Trimble Block, Sioux City, Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL for a period of three days. No foreign journals are available prior to 1920, nor domestic prior to 1923. Periodicals published by the American Medical Association are not available for lending, but may be supplied on order. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested).

Titles marked with an asterisk (*) are abstracted below.

Atlantic Medical Journal, Harrisburg, Pa.

24: 135-200 (Dec.) 1925

Twilight Zone of Medicine. W. K. Mayo, Rochester, Minn.—p. 135.
Indications for Cholecystostomy and Cholecystenterostomy. D. Guthrie, Sayre, Pa.—p. 139.
Recent Changes in Conception of Jaundice. E. B. Krumbhaar, Philadelphia.—p. 140.
Surgical Management of Jaundiced Patient. S. J. Waterworth, Clearfield, Pa.—p. 142.
Symptomatology of Cholecystitis. F. J. Dever, Bethlehem, Pa.—p. 143.
Technic of Cholecystectomy. H. F. Smith, Harrisburg.—p. 144.
End-Results of Biliary Surgery as Seen by General Practitioner. L. Litchfield, Pittsburgh.—p. 145.
Ametropia and Heterophoria. H. F. Hansell, Philadelphia.—p. 147.
Correction in Ametropia and Heterophoria. T. S. Schneideman, Philadelphia.—p. 150.
Heterophoria: Treatment. C. E. G. Shannon, Philadelphia.—p. 153.
Results Accomplished in Conservation of Vision Classes in Philadelphia. M. E. Smukler, Philadelphia.—p. 157.
Problems in Diagnosis of Neurosurgical Conditions. E. C. Russell, Philadelphia.—p. 161.
Treatment of Tuberculosis of Intestine by Oxyperitoneum: Three Cases. S. D. Gleeten, Monrovia, Calif.—p. 163.

Canadian Medical Association Journal, Montreal

15: 1093-1190 (Nov.) 1925

High Blood Pressure. R. D. Rudolf.—p. 1093.
*Relation Between Gastric Acidity and Hydrogen Concentrations of Urine; Effect of Histamin. F. D. Ackman.—p. 1099.
*Simplicity in Management of Diabetic. I. M. Rabinowitch.—p. 1106.
Basal Blood Pressure. J. D. Adamson.—p. 1112.
Pyelitis Manifesting Acute Abdominal Symptoms. W. A. Lincoln.—p. 1116.
*Surgical Treatment of Trigeminal Neuralgia. K. G. McKenzie.—p. 1119.
*Ulcerative Colitis; Case Requiring a Permanent Colostomy. T. G. Hamilton.—p. 1125.
Backache. H. S. Sharpe.—p. 1131.
*Relief of Chronic Pain in Lower Segments of Body by Sacral Epidural Injection. N. Viner.—p. 1136.
Colloidal Gold Reaction of Cerebrospinal Fluid. F. Green.—p. 1139.
Epiphora and Catarrhal Affections of Nose; Treatment. G. H. Burnham.—p. 1143.
Etiology of Cough. J. S. Pritchard.—p. 1145.

Gastric Acidity and Hydrogen Ion Concentration of Urine.—Ackman found that histamin, when given subcutaneously to a person having a normal or high gastric acidity, increases this secretion and produces a well-marked "alkaline tide" in practically all instances. In cases of hypochlorhydria, and in certain cases of achlorhydria in which the secretion of hydrochloric acid is stimulated by histamin, there develops an "alkaline tide" where formerly there was none. In those cases of achlorhydria in which there is no gastric response to the histamin, the "alkaline tide" fails to develop, apparently because of the lack of response on the part of the gastric secretion. The absence of any change in the p_H of the urine in these cases most conclusively rules out the possibility that the reaction in the other cases might be due to increased metabolic activity consequent to the histamin. These findings offer strong evidence in support of the gastric origin of the "alkaline tide," in that in practically all cases a definite relationship between gastric secretion and the p_H of the urine has been demonstrated. Ackman suggests that the consistent relationship between the gastric acidity and the urinary reaction may have a practical application in those cases in which it is impossible to examine the gastric contents directly, and a fair conception of the secretory activity of the stomach may be obtained by means of the urinary p_H curve based on hourly specimens.

Simplicity in Management of Diabetic Patient.—Rabinowitch demonstrates that the diabetic patient may follow a diet which is more practical than the one generally employed. The clinical results alone are proof of this. The principles on which it is based are scientific. The few patients who have both the time and inclination to use scales do so. The method of management described is meant to apply to those persons who represent the great majority of diabetic patients.

Surgical Treatment of Trigeminal Neuralgia.—Section of the sensory root of the fifth nerve is described by McKenzie and illustrated. The diagnosis, symptomatology and rôle of deep alcohol injections is briefly reviewed.

Colostomy for Ulcerative Colitis.—Hamilton's patient had had a colostomy done to cure an intractable ulcerative colitis of twenty-six months' standing. Almost all the colon, except the cecum and a few inches above it, had been damaged by the ulcerative process. Following the colostomy, a prolapse of the cecum developed which, with the exception of a few days, had been continuously herniated eleven months. The colon during this period was spared the irritating effect of the fecal matter on its ulcerated surface. When the prolapse was reduced, the patient immediately suffered from an exacerbation of the ulcerative process with general malaise, acute arthritis, rise of temperature and other symptoms. Hamilton resected a short portion of the colon at the hepatic flexure in order to interrupt its continuity and brought the distal end out through an incision in the midabdominal wall about 2 inches above the umbilicus. The ulcerative process in this portion of the bowel has absolutely refused to heal, and an intermittent discharge of mucus and pus persists with a not infrequent trace of blood, but the patient has gained weight, eats well and is able to work.

Sacral Epidural Injection for Pain in Lower Extremities.—Viner has found this method of treatment remarkably effective in its results in the sciaticas, the locomotor ataxias, amputation stump neuralgia, traumatic neuritis, and coccygodynia. It was definitely beneficial in rectal cancer, thromboangiitis obliterans, sacral cord tumor and arthritis deformans.

Colorado Medicine, Denver

22: 413-464 (Dec.) 1925

Rheumatism. C. E. Edson, Denver.—p. 416.
Colorado Psychopathic Hospital: Historical Note. H. T. Pershing, Denver.—p. 420.
*Laryngeal Carcinoma: Supplementary Report of Case Operated on Eighteen Years Ago. F. L. Dennis, Colorado Springs.—p. 421.
Fractures of Pelvis. Z. H. McClanahan, Colorado Springs.—p. 422.
Significance of Certain Pathologic Pupillary Changes. G. H. Hopkins, Pueblo.—p. 427.

Carcinoma of Larynx.—In 1908 Dennis reported a case of intrinsic laryngeal carcinoma in which operation by laryngofissure was done in October, 1907. The patient was reexamined in February, 1925. At that time the interior of the larynx was perfectly smooth, and while considerably distorted by scar formation, there was sufficient lumen for comfortable breathing. The woman had a very good voice, although it was not perfectly clear, owing to the fact that she had to use her false bands for phonation. Her general health was excellent and she was well able to do a good deal of hard housework.

Georgia Medical Association Journal, Atlanta

14: 442-483 (Nov.) 1925

Pediatrics and Public Health. H. B. Neagle, Augusta.—p. 442.
Athens Child Health Demonstration. T. B. Gay, Athens.—p. 448.
Better Colon Lavage. W. W. Blackman, Atlanta.—p. 452.
Splenic Anemia; Case. H. W. Birdsong, M. A. Hubert and G. O. Whelchel, Athens.—p. 453.

Illinois Medical Journal, Oak Park

48: 421-500 (Dec.) 1925

Modern Aids to Labor. W. B. Hendry, Toronto.—p. 441.
Goiter from Viewpoint of Surgeon. E. L. Moorhead, Chicago.—p. 444.
Medical Aspects of Goiter. C. L. Mix, Chicago.—p. 447.
Pathologic Viewpoint of Goiter. L. Arnold, Chicago.—p. 449.
Ocular Manifestations of Exophthalmic Goiter and Larynx in Goiter. R. J. Tivnen, Chicago.—p. 451.
Some Easily Overlooked Manifestations of Circulatory Failure. D. Riesman, Philadelphia.—p. 455.
Phases of Cancer Question. C. E. Black, Jacksonville.—p. 466.
Scarlet Fever: Treatment. A. L. Hoyne, Chicago.—p. 465.
Epidemic of Typhoid Fever Probably Due to Infected Oysters. C. T. Roome, Evanston.—p. 469.

Tonsillectomy: New Aseptic Method of Controlling Hemorrhage. O. J. Nothenberg, Chicago.—p. 472.
Child Hygiene. E. B. Lowry, St. Charles.—p. 479.
Ageing and Alzheimer's Disease. F. P. Norbury, Jacksonville.—p. 485.
Dangers and Essential Safeguards in Alkali Treatment of Peptic Ulcer. L. C. Gatewood, Chicago.—p. 491.

Johns Hopkins Hospital Bulletin, Baltimore

37: 285-367 (Nov.) 1925

*Histologic Changes Brought About in Cases of Exophthalmic Goiter by Administration of Iodin. W. F. Rienhoff, Jr., Baltimore.—p. 285.
*Biology of Streptococcus Erysipelatis. III. Experimental Production of Erysipelas in Rabbits; Demonstration of Protective Power of Immune Erysipelas Serums. K. E. Birkhaug, Baltimore.—p. 307.
Congenital Duodenal Septum with Obstruction. S. M. Seidlin, Baltimore.—p. 328.
*Congenital Cysts of Lung. A. R. Koontz, Baltimore.—p. 340.

Histologic Change in Thyroid Induced by Iodin.—The changes produced by iodin in cases of exophthalmic goiter, according to Rienhoff, are as follows: (*a*) increase in size of the thyroid as a whole; (*b*) decrease in vascularity and probably in the lymph flow through the gland; (*c*) a large increase in amount of fibrous connective tissue; (*d*) striking increase in amount of colloid deposited and contained within the thyroid; (*e*) a change in the acini from lace-like papillomatous ingrowths to round, even-walled smooth acini, regular in size and form; (*f*) a transition of epithelium from high columnar to flat cuboidal and occasionally low columnar; (*g*) a change in the nuclei of epithelial cells from large clear nuclei to the small irregular pycnotic type; (*h*) the presence of many mitotic figures before the use of iodin and their absence after iodin has been given. In comparing the histologic structure of the thyroid in thirty cases of exophthalmic goiter, in fifteen of which iodin had been given and in fifteen of which no medication whatever had been used, it was observed by Rienhoff that the histologic picture following the administration of iodin was constant, and, compared with the microscopic structure of the glands of the patients not receiving iodin, corresponded exactly, as had the microscopic changes in three cases in which an examination of the gland was made in each patient before and after the administration of iodin. The colloid state is proved clinically and histologically to be less active than the hypertrophic and hyperplastic state. An artificial remission is produced by iodin. A remission in a case of exophthalmic goiter is associated with a change in the histologic picture from a hyperplastic to a colloid state, even though there is a definite evidence of hyperplasia yet remaining. It is a question of a relative hyperplasia.

Experimental Erysipelas.—Intracutaneous inoculation of hemolytic streptococci isolated from human cases of erysipelas produced typical erysipelas-like lesions in the skin of normal and susceptible rabbits. Three types of lesions were observed by Birkhaug: erythematous, diffuse and phlegmonous. The pathologic picture of the erythematous and diffuse lesions was similar in nature to that seen in human cases of erysipelas. Intracutaneous infiltration of mixtures of immune erysipelas serum and hemolytic streptococci of erysipelas origin afforded local protection against the injurious action of the streptococci. Normal rabbit serum or immune erysipelas serum heated at 60 C. for thirty minutes failed to protect the skin against the harmful effects of the inoculated erysipelatous streptococci. Intravenous or subcutaneous administration of large doses of immune erysipelas serum protected the animal against lethal doses of hemolytic streptococci isolated from erysipelas, when the serum was injected twenty-four hours before the bacterial inoculation. Normal rabbit serum or immune erysipelas serum heated at 60 C. for thirty minutes offered no protection against the lethal dose of erysipelatous streptococci. Immune erysipelas serum afforded no local or general protection against the harmful action of hemolytic streptococci isolated from non-erysipelas sources. Intradermal infiltration of Dochez' antiscarlatinal serum produced the blanching phenomenon in the rash of 94 per cent. of the scarlet fever patients, whereas similar infiltration of antierysipelas serum failed to produce the blanching phenomenon in the rash of scarlet fever. Intradermal, intravenous and intramuscular injections of large doses of immune erysipelas serum in cases of erysipelas seem to offer promise for the specific treatment of the disease.

Congenital Cysts of Lung.—Koontz reviews 108 cases recorded in the literature, and reports one new case in detail. The baby died on the twelfth day of life from other causes. Multiple cysts were found in the lung.

Journal of Bacteriology, Baltimore

10: 513-594 (Nov.) 1925

Study of Anaerobic Bacteria. J. H. Brown, Princeton, N. J.—p. 513.
*Bacteriologic Content of Market Meats. C. M. Brewer, College Park, Md.—p. 543.
Long Tube Method of Cultivating Micro-Organisms: Mobile Colonies in Liquid Medium. L. B. Bibb, Washington, D. C.—p. 561.
*Club-Formation by Actinomyces Hominis in Glucose Broth. V. Actinomycetum-Comitans. S. Bayne-Jones, Rochester, N. Y.—p. 569.
Microbic Heredity. II. Sexual Cycle of B. Coli in Relation to Origin of Variants: Neisser and Massini's B. Coli-Mutable. R. R. Mellon, Rochester, N. Y.—p. 579.

Bacteriologic Content of Meat.—Of the bacteria encountered by Brewer in different meats, the colon group predominated. Prepared meats usually contained more bacteria than fresh meats. Smoked meats contained a much smaller number of bacteria than fresh meats. The appearance of fresh meats could not be taken as an index to its bacterial content.

Cultures of Actinomyces.—Cultures of *Actinomyces hominis*, isolated from a closed lesion of a patient with actinomycosis, were grown by Bayne-Jones in glucose agar and glucose broth without the addition of serum or any other animal protein. *B. actinomycetum-comitans* (Klinger, 1912) was found associated with the strain of *Actinomycetes hominis* isolated from this patient. This is the first recorded observation of the occurrence of this organism in the lesions of actinomycosis in this country.

Journal of Experimental Medicine, Baltimore

42: 593-746 (Nov.) 1925

Specific Infectious (Diphtheroid) Cystitis and Pyelonephritis of Cows. F. S. Jones and R. B. Little, Princeton, N. J.—p. 593.
*Effect of Ethyl Urethane Anesthesia on Acid-Base Equilibrium and Cell Contents of Blood. J. A. Hawkins and J. B. Murphy, New York.—p. 609.
*Urobilin Physiology and Pathology. V. Relation Between Urobilin and Conditions Involving Increased Red Cell Destruction. R. Elman and P. D. McMaster, New York.—p. 619.
*Glomerular Distribution of Blood in Mammalian Kidney. J. M. Hayman, Jr., and I. Starr, Jr., Philadelphia.—p. 641.
*Physiologic Response of Circulatory System to Experimental Alterations. I. Effect of Intracardiac Fistulae. E. Holman and C. S. Beck, Cleveland.—p. 661.
*Id. II. Effect of Variations in Total Blood Volume. B. S. Beck and E. Holman, Cleveland.—p. 681.
*Primary Lung Tumors in Mice Following Cutaneous Application of Coal Tar. J. B. Murphy and E. Sturm, New York.—p. 693.
*Soluble Specific Substance of Strain of Friedländer's Bacillus. I. M. Heidelberger, W. F. Goebel and O. T. Avery, New York.—p. 701.
*Id. II. Chemical and Immunologic Relationships of Pneumococcus Type II and of Strain of Friedländer's Bacillus. O. T. Avery, M. Heidelberger and W. F. Goebel, New York.—p. 709.
Soluble Specific Substance of Pneumococcus. III. M. Heidelberger, W. F. Goebel and O. T. Avery, New York.—p. 727.

Effects of Ethyl Urethane Anesthesia on Blood.—When anesthesia is produced in rabbits or rats by injections of ethyl urethane, the carbon dioxid content and p_H of the whole blood of the animal are more or less rapidly increased to a point where there is a marked uncompensated alkalosis which reaches its maximum at twenty-four hours and persists for forty-eight hours. The increase in the carbon dioxid content and p_H of the whole blood is accompanied by a decrease in the circulating lymphocytes and an increase in the polymorphonuclear leukocytes.

Urobilin Physiology and Pathology.—Further evidence is presented by Elman and McMaster that the intestinal tract is, under ordinary circumstances, the sole place of origin of urobilin. So long as the biliary tract remains sterile the presence of the pigment in bile and urine is entirely dependent on the passage of bile to the intestine. The evidence presented suffices to demonstrate that urobilinuria, occurring during blood destruction, is primarily the result of an increased excretion of bilirubin from which, in turn, an unusually large quantity of urobilin is formed within the intestine. The liver fails to remove from the portal blood all of the latter pigment that is resorbed and consequently some of it reaches the kidneys and urine.

Distribution of Blood in Mammalian Kidney.—The experiments made by Hayman and Starr show that, as a rule, the number of open glomeruli, kidney volume, kidney blood flow and urine elimination vary in the same direction, but there are exceptions to this generalization. A decrease in kidney volume may be accompanied by one of the following vascular phenomena: (*a*) the number of open glomeruli may be reduced, but the average blood flow per glomerulus continues high; (*b*) the number of open glomeruli may remain high, the constriction simply diminishing blood flow through them; (*c*) a reduction in number of open glomeruli may be accompanied by a reduced blood flow through those still remaining open.

Physiologic Response of Circulatory System to Experimental Alterations.—It is suggested by Holman and Beck that the enlargement of the heart seen clinically in so-called "idiopathic hypertrophy," "essential hypertension" and also in certain cases of cardiorenal disease, may be due to an increase in total blood mass following some interference with the mechanism for its control. The seat of this impairment in blood volume control may be: (*a*) in a chemical alteration in the blood; (*b*) in a diseased function of the kidneys which may be responsible for a decreased elimination, or for a change in the chemical composition of the blood, or (*c*) in an abnormal stimulation of the organs producing the cellular elements of the blood.

Effect of Variations in Blood Volume.—Alterations in the peripheral circulatory bed, either by the inhalation of amyl nitrite, or by the intravenous injection of histamin, result in a marked reduction in the size of the heart, due, it is suggested by Beck and Holman, to a decrease in the volume of blood contained in the central circulatory bed incident to a dilatation of the peripheral bed. Contraction of the peripheral vascular bed, either by the intravenous injection of epinephrin or by an acute increase in the intracranial pressure, results in a demonstrable increase in the size of the heart, due, it is suggested, to an increase in the volume of blood contained in the central circulatory bed. Again, variations in the rate of cardiac contraction alone cannot be considered responsible for these variations in the heart size. The size of the heart is commensurate with the volume flow of blood through it, whether the latter is altered by massive blood letting, by massive transfusions, or by a redistribution of the normal blood volume.

Experimental Primary Lung Tumors.—In this study Murphy and Sturm have noted that the external application of tar to a number of separated areas on the skin of mice, in such fashion that no single area is irritated sufficiently long to cause lesions of the skin, has resulted in a very high incidence of lung tumors. This incidence ranged from 60 per cent. in one experiment to 78.3 per cent. in another. Control mice from the same stock but from three to six months older, and for that reason the more susceptible to spontaneous lung tumors, failed to show a single instance of such growths. Even in a stock in which spontaneous lung tumors had been frequent, the incidence for corresponding age periods has never been above 5.5 per cent., while the average has been between 1 and 2 per cent. over a period of years. The tumors in the tar-painted animals occur as small white nodules, either single or multiple. They are typical epithelial neoplasms, identical histologically with those described by previous authors as occurring spontaneously in mice. Some possible factors in the causation of the tumors are discussed.

Polysaccharid in Friedländer's Bacillus.—A method is given by Heidelberger et al. for the isolation of a specifically reacting nitrogen-free polysaccharid from the so-called E strain of Friedländer's bacillus. The properties of this polysaccharid are described.

Heterogenetic Specificity Among Bacteria.—The chemical and immunologic properties of the soluble specific substances of a strain of Friedländer's bacillus and pneumococcus type II are described and correlated by Avery et al. and the serologic and antigenic similarity of these biologically unrelated organisms is discussed as an example of heterogenetic specificity among bacteria.

Journal of General Physiology, Baltimore

9: 123-284 (Nov.) 1925

Studies on Salt Action. X. Influence of Electrolytes on Viability and Electrophoretic Migration of Bacterium Coli. H. J. Shaughnessy and K. I. Criswell, New Haven, Conn.—p. 123.
Electric Capacity of Suspensions with Special Reference to Blood. H. Fricke, Cleveland.—p. 137.
Electric Resistance and Capacity of Blood for Frequencies Between 800 and 4½ Million Cycles. H. Fricke and S. Morse, Cleveland.—p. 153.
Some General Properties of Proteins. M. L. Anson and A. E. Mirsky, Cambridge, England.—p. 169.
Microdissection of Pachytene Threads of Tradescantia Virginica L.: Some Aspects of Mitosis. H. C. Sands, New York.—p. 181.
Carbon Dioxid Excreted in One Minute by One Centimeter of Nerve Fiber. G. H. Parker, Cambridge, Mass.—p. 191.
Shape of Mammalian Erythrocyte: Its Respiratory Function. E. Ponder, Edinburgh, Scotland.—p. 197.
Effect of H Ion Concentration on Availability of Iron for Chlorella Sp. E. F. Hopkins and F. B. Wann, Ithaca, N. Y.—p. 205.
Effect of Radioactive Radiations and Roentgen Rays on Enzymes. IV. Effect of Radium Emanations on Invertase. R. G. Hussey and W. R. Thompson, New York.—p. 211.
Effect of Radiations from Mercury Arc in Quartz on Enzymes. I. Effect of Ultraviolet Radiation on Pepsin. R. G. Hussey and W. R. Thompson, New Haven, Conn.—p. 217.
Roentgen-Ray Diffraction Patterns from Plant Fibers. O. L. Sponsler, Los Angeles.—p. 221.
Accumulation of Brilliant Cresyl Blue in Sap of Living Cells of Nitella in Presence of Ammonia. M. Irwin, New York.—p. 235.
Penetration of Carbon Dioxid into Living Protoplasm. W. J. V. Osterhout and M. J. Dorcas, New York.—p. 255.
Temperature and Heart Rate in Pterotrachea and Tiedemannia. O. Glaser, Amherst, Mass.—p. 269.

Journal of Nervous and Mental Diseases, New York

62: 561-652 (Dec.) 1925

Recent Work on Problem of Psychologic Types. H. Klüver, Minneapolis.—p. 561.
*Dementia Praecox: Conditions Which Might Have Affected Brain Before Onset of Disease. S. Kure and M. Shimoda, Tokyo, Japan.—p. 597.
Mental and Physical Strain (Tension) in Relation to Disease, Notably Chronic Catarrhal Otitis and Eye Defects. La F. Potter, New York.—p. 612.

Dementia Praecox.—A statistical investigation has been made by Kure and Shimoda of various conditions which might have affected the brain before the onset of this disease. Two hundred and seventy-seven patients were studied, being 71.3 per cent of available cases. If twenty-seven men and fifteen women patients, of whom little is known, are excluded, the percentage of abnormal cases would be 80; that is, 80 per cent of dementia praecox patients showed abnormalities previous to the onset of the disease. This fact appears to be more than a mere coincidence. However, as for the exact relationship between abnormal previous conditions and later development of dementia praecox, the data at hand are insufficient to be conclusive.

Michigan State Medical Society Journal, Grand Rapids

24: 641-694 (Dec.) 1925

*Therapeutic Anatomy of Lobar Pneumonia. C. F. McClintic, Detroit.—p. 641.
Acute Nephritis in Children: Relation of Childhood Affections to Kidney in Adult Life. M. Marriott, St. Louis.—p. 650.
Relation of Kidney to Pregnancy Toxemias, Especially Eclampsia. D. S. Hillis, Chicago.—p. 653.
*Cardiac Index—Means of Prognosis in Pulmonary Tuberculosis. H. L. Horwitz and R. W. Dunham, Chicago.—p. 656.
Microbic Origin of Carcinoma. J. Loudon and J. McCormack, Toronto, Canada.—p. 661.
*Case of Amaurotic Idiocy (Juvenile Form). R. C. Moehlig, Detroit.—p. 668.
Preoperative Treatment in Prostatectomy. G. V. A. Brown, Detroit.—p. 669.
Problems of Medical Profession. M. L. Harris, Chicago.—p. 671.

Therapeutic Anatomy of Lobar Pneumonia.—McClintic attempts to show that the lung possesses a peristaltic mechanism. He says that the lung circulation is facilitated by this mechanism owing to its "massage" effect. The respiratory sacs are guarded by sphincters, and these sacs are involved in pneumonia and become spastic. An irritation of the mucous membrane by bacteria and toxins can produce a spasm of the sphincters and peristaltic mechanism. This paralysis, by impeding the circulation and the respiration,

accounts for the pathologic and physiologic condition in pneumonia. The sudden passing of the spasm is marked by the crisis, and the resumption of peristaltic activity constitutes resolution. Belladonna compounds should be used to relieve the spasm, and mercurial salts to combat the bacteria by increasing the phagocytic leukocytes. If diathermy proves to be of value it will be because heat has the therapeutic effect of acting as a sedative and relaxing muscle spasms. Cold fresh air is well borne and beneficial in supplying oxygen, and the need of oxygen can be determined by a chemical examination of the blood.

Prognostic Value of Cardiac Index in Pulmonary Tuberculosis.—That the cardiac index has definite value as a method of classifying tuberculous patients, Horwitz and Dunham state, is shown by the fact that of 339 patients in Class A (favorable class), 88.86 per cent improved; of 156 patients in Class B (doubtful class), 50 per cent improved, 26 per cent failed and 24 per cent died; of 205 patients in Class C, 23 per cent failed and 59.4 per cent died. A monthly computation and plotting of the cardiac index is of value to show the progress of the patient.

Amaurotic Family Idiocy, Juvenile Type.—A case of amaurotic family idiocy of the juvenile type is reported by Moehlig in which both parents were feebleminded and their four children were mentally subnormal. The oldest child showed a precociousness in spelling, while the youngest child was an idiot of the juvenile amaurotic type. These facts, Moehlig says, would seem to be an effective argument for sterilization of the feebleminded.

Nebraska State Medical Journal, Norfolk

10: 453-494 (Dec.) 1925

Adenoids and Pharyngeal Bursa. H. B. Lemere, Omaha.—p. 453.
Diagnosis and Treatment of Ductless Gland Disorders. W. Engelbach, St. Louis.—p. 459.
Urinary Antisepsis. E. Davis, Omaha.—p. 466.
Modern Aspects of Nutrition. V. E. Levine, Omaha.—p. 471.
Dietetic Treatment of Diabetes Mellitus. F. L. Rogers, Lincoln.—p. 478.
Prognosis of Early Syphilis. O. W. Martin, Omaha.—p. 480.
*Case of Complete Heart Block. A. L. Smith, Lincoln.—p. 481.

Complete Heart Block.—Smith's case is one of complete heart block in which the auriculoventricular bundle does not function and the auricle and ventricle beat absolutely independently of each other. The patient was 70 years of age and when in bed appeared to be perfectly normal, except for the slow rate of the pulse. As soon as he attempted to stand up, he became dizzy and short of breath.

New Orleans Medical and Surgical Journal

78: 341-418 (Dec.) 1925

Greater Safety for Louisiana Babies. R. T. Lucas, Shreveport.—p. 341.
Infant's Pylorus: Spasm and Stenosis. F. G. Riley, Meridian, Miss. —p. 345.
Syphilis and Effects of Mercurialization in Doubtful Cases. H. E. Gautreaux, Covington.—p. 350
Relationship Between Public Health and Medical Practice. K. E. Miller, New Orleans.—p. 353.
Treatment of Malarial Hematuria. W. G. Kiger, Eaglebend, Miss. —p. 358.
Heart Disease: Causes and Prevention. G. S. Bel, New Orleans.—p. 360.
Digestive System in Tuberculosis. W. A. Toomer, Sanatorium, Miss. —p. 368.
Tuberculosis: How to Reduce Death Rate in Louisiana. C. R. Gowen, Shreveport.—p. 374.
Mental Deviation and Criminalism. C. P. May and M. H. May, Jackson. —p. 383.
Blood Transfusion. A. O. Bryan, Meridian, Miss.—p. 387.
Old Age: Its Cause and Prevention. S. Hobson, New Orleans.—p. 391.
Conclusions from Correlation of Laboratory Findings, Clinical Symptoms, End-Results in Tonsillectomy. L. S. Lippincott, Vicksburg, Miss. —p. 395.

Radiology, St. Paul

5: 459-546 (Dec.) 1925

Radiologic Considerations of Gastroduodenal Anatomy and Physiology. J. Cunha, Montevideo, Uruguay.—p. 459.
Determination of Quantity and Quality of Roentgen Rays. E. C. Ernst, St. Louis.—p. 468.
*Stasis in Ascending Colon Simulating Chronic Appendicitis. T. D. Cunningham, Denver.—p. 480.
*Metastasis to Bones from Carcinoma of Breast: Roentgenologic Study. H. W. Meyerding, R. D. Carman and J. D. Garvin, Rochester, Minn. —p. 486.
Compression Fractures of Spine: Roentgen-Ray Diagnosis. L. R. Sante and L. G. McCutchen, St. Louis.—p. 490.
*Sarcoma Complicating Osteitis Deformans; Two Cases. J. D. Camp, Boston.—p. 495.
Results of Roentgen-Ray Therapy in Carcinoma of Cervix of Uterus. H. Wintz, Erlangen, Germany.—p. 500.
Radioactive Substances: Therapeutic Uses. J. Muir, New York.—p. 509.
Normal and Pathologic Appendix: Roentgenologic Study. R. A. Arens and A. R. Bloom, Chicago.—p. 513.
First Three Essentials in Development of Roentgen-Ray Art. E. C. Jerman, Chicago.—p. 520.
Multiple Diverticula, with Hemorrhage, in Wall of Stomach. C. H. Sutherland, Rochester, Minn.—p. 523.
Fibroid Uterus with Bladder Complications. L. J. Carter, Brandon, Manitoba.—p. 524.
Necropsy of Roentgenologist (Dr. S. P. Grigorjey). E. C. Piette, Oak Park, Ill.—p. 525.
Endothelioma of Pleura; Case. F. W. Gaarde and C. G. Sutherland, Rochester, Minn.—p. 526.

Intestinal Stasis.—Cunningham asks: "How many of the digestive troubles of adult life have their beginning in infancy and are the result of prolonged, though at times minute, disturbances of physiology?" He believes that the correct solution of this problem can be reached only by a study of the gastro-intestinal tract from infancy to adult life in a given person. He is carrying out this study by means of repeated roentgen-ray examinations, beginning in infancy with physical and laboratory examination, clinical history and study of environmental conditions and habits. These children are selected from families in all walks of life and living under various conditions. The factors that apparently tend to promote stasis in the ascending colon and cecum are: too rapid dehydration of the intestinal contents, probably caused by lack of sufficient roughage in the diet; a poorly balanced vitamin content; insufficient exercise of the abdominal muscles, and the increasing nervous strain and consequent fatigue of modern living. When adult patients whose digestions have been normal without any symptoms referable to the gastro-intestinal tract begin to have symptoms of indigestion, in the absence of other pathologic changes, the roentgen ray usually discloses a stasis in the cecum and ascending colon, although the patients say their bowels have moved daily without assistance. These people usually are completely relieved by simple regulation of diet, rest and sufficient fluids. The symptoms suggest a chronic appendicitis; there is tenderness over the distended cecum, and appendectomy may cure or may give temporary relief. Unless properly treated medically, these cases become surgical, then again medical, while the cecum and ascending colon remain distended and the gastro-intestinal symptoms continue. Cunningham says that there are undoubtedly other factors responsible for indigestion, but careful attention to this part of the alimentary tract may save unnecessary operation, and those patients already operated on unsuccessfully may be relieved of a condition that tends to grow worse.

Metastasis to Bones from Breast Carcinoma.—Among 1,985 cases of carcinoma of the breast reviewed by Meyerding, Carman and Garvin, metastasis to the bones had occurred in sixty-seven cases. The axillary glands were found to be affected in forty cases, the supraclavicular glands in three, both supraclavicular and axillary glands in six, and the chest wall in two, making a total of fifty-three cases in which there was glandular involvement. In order of frequency the bones involved were: pelvis, twenty-six cases; femur, twenty-three cases; lumbar spine, twenty-one cases; ribs, eighteen cases; dorsal spine, eleven cases; cervical spine, four cases; clavicle, four cases; scapula, four cases; sacrum, four cases; cranium, two cases; tibia and sternum, one case each. There was multiple involvement of the bone in forty-three of the sixty-seven cases. The authors urge that in every patient with carcinoma of the breast, and without a definite history of carcinoma of the breast, who complains of "rheumatic" or "sciatic" pain, the possibility of metastasis to bone should be considered.

Sarcoma Complicating Osteitis Deformans.—One of Camp's cases showed an osteogenic sarcoma of the left femur superimposed on Paget's disease. The second case was one of osteitis deformans with superimposed sarcoma of the left humerus.

Rhode Island Medical Journal, Providence

8: 193-208 (Dec.) 1925

Sacral Anesthesia. W. Pickles, Providence.—p. 193.
Mastoiditis. H. E. Blanchard, Providence.—p. 197.
Industrial Medicine. J. F. Kenney, Pawtucket.—p. 203.

Southern Medical Journal, Birmingham, Ala.

18: 859-924 (Dec.) 1925

William C. Gorgas of Alabama. S. R. Roberts, Atlanta, Ga.—p. 859.
What Is Surgery? E. A. Graham, St. Louis.—p. 864.
Surgery in South. I. Abell, Louisville, Ky.—p. 867.
Multiple Stage Operations in Urologic Surgery. H. G. Bugbee, Buffalo. —p. 871.
*Ureteral Kinks: Incidence and Significance. G. R. Livermore, Memphis, Tenn.—p. 875.
Diagnosis in Obstetrics. J. R. Garber, Birmingham.—p. 877.
Allergy and Anaphylaxis in Dermatology. O. S. Ormsby, Chicago. —p. 881.
*Rights of Newly Born. L. R. De Buys, New Orleans.—p. 889.
Future of Dermatology. I. L. McGlasson, San Antonio, Texas.—p. 891.
Future of Neuropsychiatry. M. A. Bliss, St. Louis.—p. 894.
What Price Health? W. D. Haggard, Nashville, Tenn.—p. 896.
Relation of State Association to Southern Medical Association. A. H. Bunce, Atlanta, Ga.—p. 900.

Ureteral Kinks.—Livermore has found that ureteral kinks occur in about 10 per cent of urologic cases. They may be congenital or acquired. The acquired form is due to inflammatory elongation of the ureter, to a floating kidney or both, or to an aberrant vessel with one or both of the foregoing. The treatment is primarily nonsurgical, surgery being reserved for those cases in which other methods have failed.

Rights of Newly Born.—De Buys urges that daily observations of the newly born should be made, beginning from the time the cord is tied. The nearer birth this supervision is begun, the better for the infant. The temperature and the weight curve should be observed closely, as they frequently give the first indication of impending trouble. It should be remembered that the greater the loss of weight, the less the resistance of the individual; and if to this diminished resistance is added an infection, a digestive disturbance or an organic disease (as, for example, a hypertrophic pyloric stenosis), the infant's chances are materially diminished. Excessive losses in weight should, therefore, be avoided as much as possible. In order to prevent an unnecessary loss in weight, the feeding of the infant must be conducted efficiently. With a daily observation of the temperature, the weight curve, supervision of the breasts, daily inspection of the infant's stools and a thorough knowledge of the diseases of the newly born, it is hardly likely that any condition will be overlooked and the newly born will receive his just deserts.

Texas State Journal of Medicine, Fort Worth

21: 397-458 (Nov.) 1925

Relation of Live Stock Sanitary Commission to Public Health. N. F. Williams, Fort Worth.—p. 411.
Value of Physical Examinations in Industry. J. N. Redfern, Chicago. —p. 414.
Tryparsamide in Neurosyphilis. T. H. Harris, Galveston.—p. 417.
Synergistic Anesthesia in Obstetrics. F. A. Pierce, Dallas.—p. 419.
Scopolamin-Apomorphin Amnesia in Obstetrics. L. A. LeDoux, New Orleans.—p. 421.
Postoperative Care of Gynecologic Cases. E. W. Bertner, Houston. —p. 426.
*Cardiac Infarct and Coronary Sclerosis. G. Werley, El Paso.—p. 428.
Meningitis. N. D. Buie and T. G. Glass, Marlin.—p. 433.
History of Radiology. R. T. Wilson, Temple.—p. 435.
Neuritis of Trifacial Nerves J. M. Murphy, Temple.—p. 438.
Zinc Ionization Treatment of Otitis Media. H. L. Warwick and H. M. Stevenson, Fort Worth.—p. 442.

Cardiac Infarct and Coronary Sclerosis.—The Clinical and Pathological Club of El Paso has done 200 necropsies during the last two years, and in 25 per cent of the cases found badly diseased hearts and aortas. Four per cent showed cardiac infarct or cardiac aneurysm. There were three cases of rupture of the left ventricle, following coronary obstruction. In two specimens the right coronary artery was completely occluded, and in a third case the right coronary artery was almost closed at its orifice. There were five cases showing cardiac aneurysm, which was due to syphilis. Werley says that it has been their experience that well marked lesions will be overlooked unless the examination is done in detail and includes opening of the coronaries and histologic studies.

United States Veterans' Bureau Medical Bulletin, Washington, D. C.

1: 1-72 (Dec.) 1925

*Giardiasis (Lambliasis); Five Cases. M. B. Marcellus, Portland, Ore. —p. 1.
*Mucor Infection of Lungs Followed by Pulmonary Tuberculosis. H. Freed and J. B. Webb, San Antonio, Texas.—p. 7.
*Speech Defects in Psychoneurotics. C. B. Covey, Waukesha, Wis. —p. 10.
*Report of Case of Self-Mutilation. H. W. McAdoo, Little Rock, Ark. —p. 13.
*Treatment of Raynaud's Disease by Negative Pressure. R. S. Crichlow, New Orleans.—p. 14.
*Five Cases of Thrombo-Angiitis Obliterans. J. A. Thurston, Kansas City, Mo.—p. 18.
Physiotherapy in Treatment of Tuberculosis: Certain Laboratory Findings Relating to Physiologic Action of Ultraviolet Rays on Blood Chemistry. F. A. Davis, New Haven, Conn.—p. 22.
Plea for Colonization of Arrested Cases of Pulmonary Tuberculosis on Forest Reserve Lands. Addison M. Rothrock, Legion, Texas. —p. 30.
Preparation of Histories. D. B. Virtue, Algiers, La.—p. 34.
*Hemophilia in Dental Surgery: Report of Case. L. W. Park, Thomas, Ky.—p. 38.

Giardiasis.—Marcellus reports five cases presenting the usual symptoms, those of an acute or chronic enterocolitis or cholecystitis: viz., diarrhea of various degrees, or occasionally constipation and irregular bowel movements; pain and tenderness in the upper part of the abdomen at the costal margin, and in both sides, sometimes more pronounced on the right side than on the left; nausea on eating and occasionally vomiting; general loss of weight; weakness, and neurasthenia. Duodenobiliary drainage in four of these cases revealed many motile flagellates in the bile, and examination of the stools showed numerous ova and cysts of *Giardia intestinalis*.

Mucor Infection of Lungs.—The case reported by Freed and Webb presents an initial pulmonary and laryngeal infection with a pathogenic fungus belonging to the hyphomycetes group, none of which are reported in the literature. The specific pathologic process subsided and *Mucor corymbifer* disappeared from the man's sputum. Subsequently, there was an insidious development of pulmonary tuberculosis, which, despite the toxemia of the patient, sputum positive for tubercle bacilli, and definite marked signs of infiltration, as shown by the chest roentgenogram, showed surprisingly few physical signs of activity.

Speech Defects in Psychoneurotics.—Covey urges that all physicians should have a working knowledge of the commoner speech defects, because the speech of patients is of considerable diagnostic value. There is the retarded monosyllabic, almost inaudible speech of the manic depressive depressed; the flight of ideas with clang association and rhyming of the manic depressive manic; the word salad, verbigeration, echolalia of the dementia praecox patient; the slurring and elision of syllables of the paretic; the monotonous, high pitched utterance of the epileptic, and the scanning speech of multiple sclerosis.

Self Mutilation.—McAdoo's patient showed a badly deteriorated case of dementia praecox of the hebephrenic type. In response to some delusional idea he inserted approximately 200 foreign bodies—needles, phonograph needles and similarly pointed bodies—in the right arm from the distal end of the metacarpals to the middle of the humerus. He seemed to suffer very little harm from them. The condition was discovered accidently.

Bier's Negative Pressure in Raynaud's Disease.—Crichlow has made use of so-called negative pressure of Bier's hyperemia in several cases of Raynaud's disease, also of senile arteriosclerosis, with marked beneficial results. This treatment brings the circulation of the extremities under entire control. The patient can easily be taught to use this apparatus himself, and the results are most gratifying in the relief of pain and in stopping the progress of this disease, as well as in restoring him to his former health.

Thrombo-Angiitis Obliterans.—All five cases reported by Thurston occurred in white Gentiles. All five had oral infection. Every form of treatment was tried in these cases, though not all forms in each individual case; hot and cold

applications, injections of salines and sodium citrate intravenously, Locke's solution, Ringer's solution, typhoid vaccine, vessel exercise, ligation of the femoral vein, arteriovenous anastomosis, periarterial sympathectomy and amputation. However, amputation was the only form of treatment that met with any measure of success.

Hemophilia in Dental Surgery.—A case of diathetic hemorrhage which, by its persistence, incited the use of a great variety of popular measures of treatment is recounted by Park. The patient bled for nine days after the extraction of two teeth. Every known remedy for this condition was tried and failed. The quantity of blood lost each day was not great, but the condition had not apparently yielded to treatment. On the tenth day, however, the first signs of resolution of tissue in the socket were visible and a marked decrease in bleeding was observed. At this time there was an anaphylaxis; the reaction of the serums the man had been given and the urticarial wheals which formed on his arms, legs and face gave him great discomfort. On the eleventh day the bleeding had nearly ceased and on the twelfth day entirely so, and the socket healed rapidly.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Edinburgh Medical Journal

32: 734-780 (Nov.) 1925

"Mental Invalids." II. Clinical Examination. C. C. Easterbrook.—p. 734.
Eighteenth Century Neurologist (Robert Whytt). J. D. Comrie.—p. 755.
Oxyuris Ova in Appendix. H. A. Lediard.—p. 762.
*Effect of Antiscarlatinal Serum in Erythema Nodosum. G. H. Percival.—p. 763.

Antiscarlatinal Serum in Erythema Nodosum.—Percival's patient, aged 2 years and 4 months, had been suffering from whooping cough and bronchopneumonia. After eight weeks, a rash appeared on the limbs and trunk, including the neck, and on the forehead and eyelids. Accompanying the rash there was some lacrimation and slight congestion of the conjunctivae; the soft palate and the tonsils were slightly congested, with a suspicion of punctation on the former, and the tongue was covered with a thin white fur. There was no enlargement of the suboccipital or axillary glands. The case was regarded as possibly one of scarlet fever. The Dick test was performed and the result was positive. On the ninth day after the appearance of the rash, erythema nodosum developed. The nodules were distributed bilaterally, on the shins, calves and forearms. The nodules became purplish two days later, and gradually faded with the appearance of bruising. Seven days from their first appearance, all that remained to mark their existence was slight thickening at the site of each nodule, and a return of the purple tint when the limb was dependent. No phlyctenules or subungual hemorrhages accompanied the erythema nodosum, and there was no synovial involvement. Generalized desquamation did not take place. The Dick test, repeated fourteen days after its first application, proved negative. A few hours after the development of erythema nodosum, 0.3 c.c. of antistreptococcal (scarlatina) serum was injected intradermally into one of the nodules. Seventeen hours afterward a pale area was evident around the site of the injection, and was even more distinct after twenty-four hours. Bruising did not occur in this ring of pallor, though it appeared at the periphery of the nodule, and this pale area was discernible for six days. The diagnosis of erythema nodosum was confirmed by two experienced clinicians, and the mode of healing with the appearance of bruising bore out the diagnosis. Lastly, a similar amount of serum from the same sample was injected in two cases of typical scarlet fever, in two of rubella, and in an erythema caused by the sun; in the scarlet fever cases a definite Schultz-Charlton reaction was obtained after seventeen hours; in the other cases, nothing happened. The ring of pallor that developed at the site of the injection in the erythema nodosum was corroborated by several observers.

Glasgow Medical Journal

33: 241-296 (Nov.) 1925

Symptomatology of Disturbances of Visual Function. A. M. Ramsay.—p. 241.
Some Old Tendencies in Medicine. J. D. Comrie.—p. 259.
*Fatal Anemia at an Unusually Early Age. A. S. Barr.—p. 272.

Fatal Anemia at Early Age.—Barr relates the case of a boy, aged 16, who had a history of progressive weakness of three months' duration with increasing pallor of the skin for five months. When admitted, his skin was distinct lemon yellow, and weakness, shortness of breath, abdominal pain and occasional sickness were the chief symptoms. The subcutaneous fat was well preserved. Glossitis was never present, and although the bowels moved freely, diarrhea was not a feature. There were no hemorrhages, apart from a few petechial spots on the arms during the severest part of the illness, and a small traumatic hemorrhage when the Ryle tube was passed. Throughout the illness, slight pyrexia from (99 to 100 F.) was almost a constant feature. On admission, blood examination showed: red cells, 770,000 per cubic millimeter; white cells, 5,600 per cubic millimeter; hemoglobin, 22 per cent; color index, 1.6; anisocytosis (with many macrocytes) and poikilocytosis; no nucleated red cells. A fractional test meal showed a condition which practically amounted to achlorhydria. Five weeks after admission, in spite of vigorous treatment, the boy was very much weaker. The blood examination at this time showed: red cells, 420,000 per cubic millimeter; hemoglobin, 10 per cent; color index, 1.25. The boy died two months after admission to the hospital. The question is whether this was a case of true pernicious (Addison's) anemia, or an anemia of aplastic type.

Irish Journal of Medical Science, Dublin

503-554 (Nov.) 1925

Roentgen-Ray Diagnosis of Gallbladder Disease. J. A. Geraghty.—p. 508.
*Maternal Mortality of the United States. R. E. Tottenham.—p. 516.
Iodin in Treatment of Goiter. C. H. Mayo.—p. 530.

Maternal Mortality in Hospitals of United States.—Tottenham gives data on the maternal mortality in many American hospitals that are of interest: Toronto General Hospital, 1,293 deliveries, maternal mortality, 1 per cent.; Burnside Hospital, Toronto, 6,982 deliveries, maternal mortality, 1.2 per cent.; Jefferson Hospital, Philadelphia, 1,433 deliveries in four years, maternal mortality for the four years, 2.3 per cent.; Boston Lying-In Hospital, 1,133 deliveries, maternal mortality, 2.2 per cent.; General Hospital, Minneapolis, 1,263 deliveries, maternal mortality less than 1 per cent.; Swedish Private Hospital, Minneapolis, 982 deliveries, maternal mortality, 0.4 per cent.; Bellevue and Associated Hospitals, New York, 4,286 deliveries, maternal mortality, 2.5 per cent.; Montreal Maternity, 1,354 deliveries, maternal mortality, 0.5 per cent.; Johns Hopkins Hospital, 875 deliveries, maternal mortality, 0.7 per cent.; Cook County Hospital, Chicago, 3,378 deliveries, maternal mortality, 3.6 per cent.; New York Lying-In Hospital, 3,511 deliveries, maternal mortality, 0.9 per cent. Tottenham also says that many of these hospital reports are arranged in a very confusing form, and are by no means easy to interpret. The Cook County Hospital report was the most difficult.

Japanese Journal of Medical Sciences, Tokyo

1: 1-110 (1925)

Serologic Investigation of Relationship of Various Cetacea. N. Fuse.—p. 1.
Studies on Synovia. N. Fuse.—p. 5.
Physiologic Significance of Divisions of Cetacean Stomach. M. Takata.—p. 11.
Physicochemical Properties of Urine of Cetacea. S. Morimura.—p. 25.
Contents of Cysts of Seminal Tracts; Fluid Collections in Uterus. K. Okazaki.—p. 29.
Nature of Ambergris. M. Suzuki.—p. 31.
Composition of Blood of Cetacea. Y. Okahara.—p. 43.
Chemistry of Flesh of Cetacea. M. Suzuki.—p. 49.
Nature of Peritoneal Fluid of Cetacea. N. Fuse.—p. 51.
Sugar Content of Cetacean Blood. Y. Masumizu.—p. 55.
Composition of Tendons and Sclerae of Cetacea. S. Oikawa.—p. 61.
Blood of Cetaceans. M. Suzuki.—p. 71.
Pancreas or Enzymes of Cetacea. M. Takata.—p. 73.
Joint Cartilage of Cetacea. S. Oikawa.—p. 91.
Amniotic Fluid of Cetacea. M. Suzuki.—p. 97.
Biochemistry of Urine of Various Mammals. N. Fuse.—p. 103.

Japan Medical World, Tokyo

5: 275-308 (Oct. 15) 1925

*Influences of Constituents of Thymus Gland Cells on Growth of Young Organism. Y. Miyagawa and K. Wada.—p. 275.
*Surgical Treatment of Bronchial Asthma. F. Ishiyama.—p. 289.

Influence of Thymus Cell Constituents on Growth.—When the cell constituents of a calf's thymus gland are introduced into the peritoneal cavity of young rats or dogs, the growth, development and differentiation of the animal are influenced. Miyagawa and Wada believe that there is a direct action of these cell constituents which are absorbed in the blood circulation on the cells of living thymus or thyroid, facilitating or retarding function, and influencing growth and development. They believe that they have proved the presence of direct action by animal experiments. This direct action is not absolutely specific, however; it is only relatively specific, but the stimulus is very adequate and effective.

Surgical Treatment of Bronchial Asthma.—Ishiyama's clinical experience convinces him that the resection of the cervical sympathetic nerve, as done by Kümmel, does not give relief from bronchial asthma. On the other hand, Freund's operation of costal cartilage resection has marked effects on bronchial asthmatic patients who have dilatation of the chest wall. The effects of Freund's operation become more marked as time passes.

Journal of Anatomy, London

110: 1-120 (Oct.) 1925

Facial Muscles: Modiolus and Muscles Surrounding Rima Oris; Panniculus Adiposus. G. H. S. Lightoller.—p. 1.
Cortical Lamination of Tarsus. H. H. Woollard.—p. 86.
Septdigitate Foot in Man. G. Harrower.—p. 106.
Organ of Jacobson in Horse, Ox, Camel and Pig. F. C. Minett.—p. 110.
*Case of Tortuosity of Internal Carotid Artery. A. R. Cadarso and J. J. B. Goyanes.—p. 119.

Tortuous Internal Carotid.—In the case reported by Cadarso and Goyanes, the left internal carotid artery, 1 cm. below the inferior opening of the carotid canal, was disposed in a complete coil in the sagittal plane and was comparable in appearance with the coiled part of a manometer tube.

Journal of Mental Science, London

71: 631-874 (Oct.) 1925

Investigation of Some Causes of Insanity. F. W. Mott.—p. 631.
Lethargic Encephalitis: Psychologic Implications. G. A. Auden.—p. 647.
Incidence of Chronic Infective Processes in Mental Disorder. T. C. Graves.—p. 658.
Delinquency. W. A. Potts.—p. 675.
Psychopathic Personality. M. H. Smith.—p. 683.
Institutional Treatment of Mental Defectives. A. M. McCutcheon.—p. 694.
Iodin Content of Thyroid Gland. F. A. Pickworth.—p. 703.
Methods of Photographing Spirochaeta Pallida in General Paralysis. R. M. Clark.—p. 721.
Luminal in Epilepsy. G. W. T. H. Fleming.—p. 722.
Case of Cerebral Tumor. W. L. Forsyth.—p. 729.
Case of Unilateral Hydrocephalus. F. Noronha.—p. 729.

Journal of State Medicine, London

33: 501-550 (Nov.) 1925

Climate and Disease Incidence in India: Leprosy, Phthisis, Pneumonia and Smallpox. L. Rogers.—p. 501.
Routine Pathologic Examination as Applied to Physiologically Inefficient Aviators. H. E. Whittingham.—p. 511.

Kenya Medical Journal, Nairobi, East Africa

2: 185-214 (Oct.) 1925

Tsetse Fly Control in Kenya. C. B. Symes.—p. 191.
Interview with Meru Witch Doctor. C. M. Vernon.—p. 210.
Belladonna Poisoning by Seeds of Datura Conigera. G. V. W. Anderson.—p. 213.

Lancet, London

2: 1003-1046 (Nov. 14) 1925

*Specific Character of Malignant Neoplasia. W. B. Bell.—p. 1003.
Gastrojejunostomy. J. Sherren.—p. 1007.
*Investigation of Mercurochrome. A. T. Todd.—p. 1017.
Novasural: New Diuretic. A. R. Gilchrist.—p. 1019.

Character of Malignant Neoplasia.—Bell says that malignant neoplasia is a specific growth process in that it is a reversion on the part of the starving cell to the nutriment seeking proclivities of its ancestral type, the chorionic epithelium. A comparison between the chemical constitution of different tissues in regard to the factors concerned in growth processes demonstrates clearly not only that malignant tumors are richer in this respect than the corresponding normal structures and innocent neoplasms of the same parts, but also that the physiologically maligant chorionic villi show even higher values than pathologically cancerous tissues. The chorionic epithelium is supermalignant. In the search for a substance that will arrest or have a specific lethal action on cells that possess the chemical constitution associated with malignancy, only lead has been found. This metal is specifically active in regard to the chorionic epithelium, to the cells of cancerous growth, to normal embryonic growth, and to mature cells rich in phosphatids.

Value of Mercurochrome-220 Soluble.—The conclusions reached by Todd as the result of his experimental and clinical observations are as follows: Mercurochrome is a powerful antiseptic of low toxicity, rapid and deep penetrability, and causes little irritation. It does not precipitate albumins. If protected from light, it is stable for long periods in physiologic sodium chlorid solution. Its antiseptic properties are augmented by acidity; they are diminished by increased density of solvent and are likely to be less apparent in heavy infections. Various strains of an organism show differences in susceptibility. At acidities near to normality its antiseptic properties are relatively feeble and it is unlikely to be of value in general infections.

2: 1047-1102 (Nov. 21) 1925

Nature of Man's Structural Imperfections. A. Keith.—p. 1047.
*Prophylaxis of Common Cold and Febrile Catarrhs. A. I. Simey.—p. 1051.
*Sensibility of Heart. Human Experiment. G. Waugh.—p. 1054.
*Influence of Glycerin Emulsion of Testes and Suprarenals on Tuberculous and Senile Patients. V. Korenchevsky.—p. 1056.
*Myomectomy as Treatment of Election for Uterine Fibroids. V. Bonney.—p. 1060.
*Margosa Oil in Treatment of Cancer. K. K. Chatterji.—p. 1063.
*Sudden Disappearance of Extreme Edema in Chronic Nephritis. A. J. S. Pinchin.—p. 1065.
Fat Necrosis of Breast. C. Rowntree.—p. 1065.
*Case of Recurrent Hair-Ball of Stomach. R. Harris.—p. 1066.

Prophylaxis of Common Cold.—Simey discusses this problem from the standpoint of the medical officer of a boy's school. His prophylactic measures consist of keeping the boys out of infection's way by avoiding overcrowding, and raising their immunity by prophylactic vaccination with stock vaccines.

Sensibility of Heart.—In the case cited by Waugh, an exploratory pericardiotomy was carried out with a purely regional and local analgesia, in the hope of discovering a lesion that could be benefited by surgical treatment. The lesion found was a fibroplastic pericarditis binding tightly the whole of the heart muscle to the parietal pericardium, with small lacunar spaces containing serous fluid intervening at intervals. The length of time taken to free the whole of the heart from its attachment to the pericardium was ten or twelve minutes, and the whole operation occupied about thirty-five minutes. At no stage of the operation did any stimulus that was applied produce any sensation that the patient was able to record in consciousness, and throughout most of the proceedings he chatted with the nurse; nor was this the sequence of amnesia, as he can relate fully at the present day all the ordinary details of the operation that he observed five years ago.

Organotherapy in Tuberculosis and Senility.—Observations made by Korenchevsky on seventy tuberculous patients and fourteen senile persons indicate practically no efficiency in the method of oral administration of preparations of testes and suprarenals.

Myomectomy for Uterine Fibroids.—As the outcome of his experience with myomectomy in 220 cases, Bonney urges a more extensive adoption of the operation so as to include in its scope many of the cases showing fibroids commonly dealt with by hysterectomy in order to conserve the uterus. Conservation of the uterus should be the ideal to be aimed at by the surgeon whenever the organ, apart from the tumors, is reasonably healthy. The largest number of fibroids that Bonney has enucleated at a single operation was eighty. A

number of patients have subsequently conceived. In regard to the preservation of pregnancy complicated by fibroids which have to be removed, Bonney says that it is usually possible to achieve this when the tumor is solitary or, when multiple, not present in large numbers. Seven tumors are the most he has been able to enucleate without disturbing a coexistent pregnancy.

Margosa Oil in Cancer.—Chatterji relates his experience in the treatment of fungating ulcers with salts of margosa oil, which is obtained from the seeds of the nim or margosa tree and has in its composition saturated and unsaturated fatty acids. The unsaturated fatty acids appear to consist of oleic acid and an acid belonging to the linolic acid series, which is said to be the characteristic fatty acid of margosa oil. This acid has been called margosic acid, and it is not known to have been obtained from any other oil.

Nephritic Edema Disappears After Attack of Erysipelas.—Pinchin relates the case of a workman, aged 24, who had suffered more than fifteen years from chronic nephritis, which was a sequel of an attack of diphtheria. The edema of the legs, ascites and hydrothorax was extreme. Medicinal treatment, tapping and even decapsulation of both kidneys gave no relief. Finally, an erysipelatous condition of the legs and body developed, and within eight days all signs of fluid disappeared, and the patient apparently was well. There was no trace of edema; the urine still contained a heavy trace of albumin, but no casts.

Recurrent Hair Ball of Stomach.—Harris' patient has had five large hair balls removed from her stomach in the course of fourteen years. Apart from her hair-eating habits this woman was quite normal mentally, being well educated and a very fair musician. She seems to have suffered no permanent ill effects from her repeated operations, since her abdominal wall is firm, and, when her stomach is not full of hair, her digestion is unimpaired.

2: 1103-1152 (Nov. 28) 1925

*Muscular Dystrophies: Sympathetic System and Endocrine Glands. E. Bramwell.—p. 1103.
*Specific Treatment of Pneumonia. J. S. Dick.—p. 1110.
*Lipiodol in Diagnosis of Pregnancy. C. Heuser.—p. 1111.
*Polycythemia Rubra Relieved by Roentgen-Ray Treatment; Case. S. W. Patterson.—p. 1112.
*Acute Glomerulitis; Two Cases. S. C. Dyke.—p. 1114.
Undulant Fever Contracted in England; Case. C. R. Box and J. Bamforth.—p. 1115.
Large Mesenteric Cyst in Infant: Removal, Recovery. J. Morley and C. M. Manch.—p. 1116.

Muscular Dystrophies.—Bramwell believes that the generally accepted view according to which the muscular dystrophies are regarded as myopathies or primary diseases of muscle is a negative conception. He finds much evidence which would appear to suggest that the skeletal muscles in man have a dual innervation—a somatic supply concerned with movement and a sympathetic supply concerned with fixation. The suggestion is advanced that the muscular dystrophies may, perhaps, be determined by disease of the sympathetic supply to the skeletal muscles. The histologic appearances encountered in the muscular dystrophies are more easily accounted for by postulating a common cause than on the assumption that the process is a primary one affecting either the interstitial tissue or the muscle. An analogy is drawn with the tabetic arthropathies in which both hypertrophic and atrophic changes are seen. Symptoms are observed in the muscular dystrophies which cannot be explained by a primary disease confined to the muscles. This would suggest that the atrophic paralysis of the muscles is merely the most prominent manifestation of a more widespread process. It is suggested that the gradual loss of power and wasting may be determined either as a direct consequence of interference with the sympathetic innervation or as a consequence of secondary involvement of the somatic nerve fibrils by the changes in the muscles and interstitial tissue which result from disease of the sympathetic nerve supply. The suggestion is advanced that cases showing muscular dystrophy in which great improvement or recovery has occurred may perhaps be explained by a difference in the nature of the pathologic process. While the familial cases may be due to an abiotrophy of the sympathetic neurons, these isolated cases may conceivably have been determined by a toxic neuritis which has selected the sympathetic fibers and produced an atrophic paralysis of similar distribution. Pseudohypertrophy, when it occurs, is an individual rather than a familial characteristic. It is suggested that it may possibly be a superadded phenomenon dependent on a relative pituitary insufficiency. Facts are submitted which appear to indicate a relationship between disorders of the pituitary gland and the muscular dystrophies. It may be that disturbances of the pineal and other glands also occur. The probability would appear to be that the two conditions are due to a common cause rather than that the muscular dystrophy is secondary to the endocrine disturbance.

Vaccine Therapy in Pneumonia.—Dick has been using pneumococcal vaccine regularly for fifteen years as opportunity offered, and, though he has had cases in which this treatment seemed to have no effect, he feels strongly that every incipient case of pneumonia or doubtful "influenza" should be treated with pneumococcal vaccine without delay.

Diagnosis of Pregnancy.—When a woman after conception, and after one or more missed periods, wants to know whether she is pregnant, and the clinical examination is indecisive, Heuser says that lipiodol must be injected into the uterus. A roentgenogram should then be taken. If the injection has been successful, the roentgenogram will show, if the fetus is more or less developed, that the uterine cavity is not well filled, the lipiodol penetrating only around the fetus because the cavity is occupied. When the fetus is larger, the liquid penetrates very little, indicating pregnancy. If the period is missed once or twice and the patient thinks herself pregnant, the injection of the lipiodol into the uterine cavity may show in triangular shape and at the same time one or both tubes may fill up with the liquid. In such a case the roentgenogram shows that the uterine cavity is unoccupied and there is no pregnancy. The injection of lipiodol into the uterus does not provoke abortion if definite rules are observed.

Roentgenotherapy in Polycythemia Rubra.—A case of essential polycythemia rubra was treated successfully by Patterson by exposing the long bones to roentgen rays with the object of arresting overproduction of blood. It is suggested that the method may also be useful in treating certain cases of high blood pressure.

Acute Glomerulitis.—Two cases of pure acute glomerulitis with fatal issue are described by Dyke. Both cases were characterized by almost complete suppression of urine and complete absence of edema. Evidence is adduced pointing to the infective nature of this type of case, though in neither of the two instances could the causative organism be identified.

Medical Journal of Australia, Sydney

2: 521-544 (Oct. 21) 1925

Extracts of Endocrine Glands: Their Clinical Application. R. L. Davies.—p. 521.
Endocrine and Mental Disorders. G. P. U. Prior.—p. 524.

Practitioner, London

115: 301-368 (Nov.) 1925

Treatment of Malaria in Britain. R. Ross.—p. 301.
Initial Treatment of Fractured Limb. M. Sinclair.—p. 312.
Treatment of Fractures of Limbs. F. D. Saner.—p. 321.
Loose Bodies in Joints. L. Rogers.—p. 332.
Operation for Full-Time Extra-Uterine Pregnancy. D. W. Roy.—p. 339.
Use of Color in Treatment of Disease. J. D. Hessey.—p. 342.
Value of Medical and Veterinary Collaboration. F. Hobday.—p. 346.

Quarterly Journal of Experimental Physiology, London

15: 201-450 (Oct. 30) 1925

*Effect on Stomach of Stimulation of Peripheral End of Vagus Nerve. E. D. M'Crea, B. A. M'Swiney and J. S. B. Stopford.—p. 201.
Sedimentation and Rouleaux Formation. I. E. Ponder.—p. 235.
*Appearances of Mammalian Erythrocytes Under Dark Ground Illumination. W. G. Millar.—p. 253.
Technical Points Important for Study of Metabolism of Rabbits. V. Korenchevsky.—p. 259.
Comparative Physiology of Contractile Tissues. I. Action of Electrolytes on Invertebrate Muscle. L. T. Hogben.—p. 263.

Pancreas of Teleostean Fishes and Source of Insulin. S. Vincent, E. C. Dodds and F. Dickens.—p. 313.
*Effects of Fatigue and Temperature on Suprarenals of Rat. S. Vincent. —p. 319.
*Active Principles of Posterior Lobe of Pituitary. W. Schlapp.—p. 327.
Latent Period of Skeletal Muscle. J. F. Fulton.—p. 349.
Experiments on Contraction of White Connective Tissue Fibers. C. J. Tidmarsh and J. Tait.—p. 367.
Tactile Sensory Reflex. F. Allen and M. Weinberg.—p. 377.
Gustatory Sensory Reflex. F. Allen and M. Weinberg.—p. 385.
Structure and Function of Spleen. J. Tait and M. F. Cashin.—p. 421.
Examination of Sensitivity to Different Regions of Spectrum of Individuals with Hypochromatic Vision. H. B. Bradbrooke and H. E. Roaf.—p. 447.

Effect on Stomach of Stimulation of Peripheral End of Vagus.—M'Crea, M'Swiney and Stopford find that the primary effect on the stomach of stimulation of the peripheral cut end of either vagus is dependent on the existing condition of the peripheral mechanism ("tonus"), and may be inhibitor or augmentor. The inhibitor or augmentor effect may involve both "tonus" and movement. The final effect of stimulation is to bring about the augmentation of existing movement or to initiate movement. "Tonus" and contraction may vary inversely or directly.

Erythrocyte Structure.—No signs of internal structure could be seen by Millar in the human erythrocyte, even under the best conditions of dark ground illumination, an objective of numerical aperture 1-32 being used.

Effect of Exercise on Suprarenals.—Vincent's experiments show that the effect of exercise on the chromaphil reaction is not direct but secondary to the lowering of the animal's temperature.

Active Principles of Posterior Lobe of Pituitary.—Schlapp's experiments provide no positive evidence that the pressor and melanophore responses of the pituitary body are due to distinct substances.

Sei-i-Kwai Medical Journal, Tokyo

44: 1-28 (Oct.) 1925

Treatment of Bromidrosis Axillaris with Mercury Oxid. T. Shimozuma. —p. 1.
Studies on Fatigue and Efficiency. S. Uramoto and K. Utiyama.—p. 25.
Specific Dynamic Action of Protein. I. Influence of Amino-Acids on Metabolism of Fat and Carbohydrate in Animal Body. H. Nagaoka. —p. 26.
Morphologic Changes of Testes Due to Bacterial Infections. R. Hagihara.—p. 27.

Archives Internat. de Méd. Expérimentale, Liége

1: 483-733, 1925

*Spleen Treatment of Tuberculosis. Bayle.—p. 483.
Growth of Embryonal Tissues Outside the Organism. Mendeléeff.—p. 503.
*Indirect Means to Promote Allergy. B. Dujardin and N. Decamps.—p. 539.
*Platelet Extract and the Blood Pressure. J. Roskam.—p. 577.
Experimental Study of the Cardiovascular and Diuretic Action of Calcium Salts. L. Brull.—p. 613.
*Functions of the Gallbladder. L. Delrez and H. Cornet.—p. 649.
Brain Lesions in Amyotrophic Lateral Sclerosis. Van Bogaert.—p. 677.

Spleen Organotherapy in Tuberculosis.—This is Bayle's tenth publication on what he calls the "remarkable way in which subcutaneous injections of spleen extract check the development of tuberculosis." He has been experimenting with it since 1903, and he here describes research on twelve guinea-pigs, confirming the tendency to arrest and healing of experimental tuberculosis under the influence of the spleen treatment. He uses two parts of a glycerol extract of pigs' spleens to three parts of physiologic solution.

Indirect Means to Induce Immunity.—Dujardin and Decamps present evidence to show that injection of any antigen induces or intensifies the production not only of its own specific antibodies, but also, at the same time, of all the antibodies, of any kind previously present. If the specific antibodies are not very potent, their action may be effectually supplemented by the intensified antibodies of other kinds. The success depends of course on the individual capacity of the organism for reaction. This indirect method for influencing antibody production is not utilized to the full at present. They urge its application in the form of parenteral protein therapy as an adjuvant to the ordinary treatment. They relate that this alone gave surprisingly favorable results in some cases of syphilis refractory to the classic treatment. They give the details of a number of cases of syphilis in which, under a series of injections of milk, the blood and spinal fluid reactions became negative. By exalting the collateral sensitizations we may succeed in exalting the special sensitization which otherwise we are not able to influence. They suggest tabes and the preparesis stage as a particularly promising field for this treatment seeking to modify the soil.

Action of Blood Platelet Extract on the Blood Pressure.—Roskam's findings suggest that the aqueous extract of rabbit platelets has a dual vasomotor action, dilating the capillaries while constricting the arteries and probably the veins. Injected intravenously, it notably reduced the blood pressure in rabbits and dogs. Human and dog platelets had little if any action in this line.

Functions of the Gallbladder.—Delrez and Cornet report that the walls of the gallbladder yield cholesterol to the bile.

Bulletin de l'Académie de Médecine, Paris

94: 1035-1074 (Nov. 24) 1925

*Endometrioma and Uterine Dysembryoplasia. M. Letulle et al.—p. 1038.
The Wine Legend and the Abuse of Wine. J. Lépine.—p. 1056.
Radioactive Mineral Waters of Bagnères de Luchon. Lepape.—p. 1061.
*Epinephrine in Otolaryngology. G. Laurens.—p. 1069.

Endometrioma and Dysembryoplasia of the Uterus.—Letulle, Tuffier and Lambert report, among others, a case of interstitial endometrioma of the uterus, also an aberrant endometrioma, beneath a laparotomy scar, and another in the groin. The age of the women ranged between 35 and 52. In accord with Cullen, the authors believe that the interstitial endometrioma represents a hyperplastic malformation involving only a certain portion of the uterine mucosa. The old term for it, adenomyoma, is incorrect. The aberrant or extrauterine endometrioma behaves like a supernumerary uterus. All these malformations are apparently due to some disturbance in the fusion of the Müllerian ducts at the third month of embryonal life.

Epinephrine in Otorhinolaryngologic Surgery.—Laurens asserts that the by-effects of epinephrine, in surgery, may be avoided if the drug is applied locally. No complications will occur even with 5 or 10 cc. of a 0.1 per cent solution of epinephrine used in this way, he says, in the ear, nose and throat. In subcutaneous injections, the amount of 25 drops of this epinephrine solution, in 100 cc. of the anesthetic solution, should not be surpassed. He advises local application of epinephrine a few minutes before a submucous injection in the nose.

Comptes Rendus de la Société de Biologie, Paris

93: 1137-1196 (Nov. 13) 1925. Partial Index

*Urethritis from Pasteurella. J. P. Papadopoulo.—p. 1139.
Transmission of Herpetic Encephalitis to Rabbits. P. Remlinger and J. Bailly.—p. 1142.
*Antibodies and Antigen in Pleural Effusion. M. Salomon and J. Valtis. —p. 1145.
Have Radium Emanations an Affinity for Cancer Tissue? Kotzareff.—p. 1148.
*Benzoin Test with Brain Tumors. G. Guillain et al.—p. 1151.
*Action of Agaric Acid on Autonomic Nervous System. Bergström.—p. 1155.
*Idem of Coumarin. E. Bergström.—p. 1159.
*Idem of Eserine. K. Granberg.—p. 1167.
*Idem of Jalapin and Cambogia. N. Hollander.—p. 1171.
*Idem of Colocynth. N. Hollander.—p. 1175.
*Idem of Colchicine. T. Jacobson.—p. 1178.
*Idem of Peptone and Glycocoll. F. Nord.—p. 1185.
*Idem of Nicotine. H. Rydin.—p. 1189.
*Action of Nicotine on Epinephrine and Acetylcholine. H. Rydin.—p. 1193.

Urethritis of Pasteurella Origin.—Papadopoulo observed in Egypt six cases of urethritis caused by pasteurella. Infection by this bacterium, he says, has not been cited to date among the nongonorrheal affections of the urethra. He emphasizes that the pasteurella may easily be mistaken for the gonococcus.

Tuberculous Antibodies and Antigen in Blood and Pleural Effusion.—Salomon and Valtis' examination was made on nineteen patients. The fixation reaction was positive in the blood serum and the pleural effusion of thirteen of fourteen patients with pulmonary tuberculosis, treated by artificial pneumothorax. In all these cases, except two, the proportion of antibodies was the same in the serum and the effusion. The antigen property of both fluids was also tested. While

the exudate with pneumothorax contained sometimes large amounts of antigen, the exudate in simple tuberculous pleuritis did not appear to possess any antigen property.

Benzoin Test with Cerebral Tumor.—Guillain, Laroche and Lechelle applied the colloidal benzoin test forty-nine times to the cerebrospinal fluid from twenty-eight patients with a tumor of the brain. The response was negative in five subjects. In seventeen the reaction showed negative in the first five test tubes (syphilis zone); positive in the sixth to tenth tubes, sometimes to the fourteenth tube (meningitis zone). In six instances the test was positive in the first five tubes, also in the last, but negative in the tubes between. The absence of precipitation in several tubes, between the two specific zones of precipitation, may be valuable in differentiation of a brain tumor from syphilis.

Research of Swedish Scientists on Action of Certain Drugs.—The experiments were conducted on rabbits and frogs. Bergström found that agaric acid stimulated the sympathetic and parasympathetic motor nerves in the uterus, intestine and heart. It enhanced also the action of epinephrine and alkaloids on the parasympathetic. The effect of very large doses of agaric acid was the opposite. Coumarin appeared to inhibit the excitability of the sympathetic and parasympathetic nerves, while reducing the contractility of the smooth muscles. Granberg found that eserine paralyzed the sympathetic motor nerves. Hollander reports that jalapin exerted a toxic action on the parasympathetic; and colocynth, although a cathartic, in large doses paralyzed the parasympathetic nerves of the intestine. Jacobson found that colchicine paralyzed the parasympathetic terminal nerves, but did not affect the sympathetic motor nerves of the heart. Nord states that large doses of peptone, introduced subcutaneously, prolonged the increase of glycemia from epinephrine. Peptone as well as glycocoll seemed to arrest the hypoglycemia-inducing action of insulin. Rydin asserts that in his research nicotine paralyzed the terminal sympathetic motor innervation and even the inhibiting parasympathetic; thus checking the motor action of epinephrine and of acetylcholine.

Nourrisson, Paris

13: 349-412 (Nov.) 1925

French Institution for Convalescent and Undernourished Infants. P. Lereboullet.—p. 349.
*Tetany of Young Children. E. Lesné and R. Turpin.—p. 356.
Jaundice of the New-Born. H. Slobosiano and P. Herscovici.—p. 373.

Clinical Character and Treatment of Tetany in Young Children.—Among Lesné and Turpin's fifty cases, a latent, or spasmophilic, condition of tetany was noted in thirty-three, and a manifest form in seventeen. The age of the children ranged from 13 months to 4 years. The affection appeared more frequently during the winter, evidently in connection with light deficiency. Signs of rickets were manifest in twenty-two of the thirty-three cases of latent tetany. The level of the ionized calcium in the blood serum was below normal in all cases. Chronaxia was increased during the spasms. Lesné and Turpin consider calcium chloride and the ultraviolet rays as the most effectual treatment of tetany. The calcium chloride should be given in daily doses of from 4 to 5 Gm. to infants. Daily exposures to the rays, or three times a week, are gradually increased from two to fifteen minutes. Series of fifteen irradiations may be repeated at ten days' intervals. A complete recovery was obtained in eleven patients out of twenty-three with latent tetany after one or two series. The treatment appeared less beneficial in latent or manifest tetany associated with rickets; even three series failed to display any influence.

Revue Franç. de Gynécologie et d'Obstét., Paris

20: 577-608 (Oct. 25) 1925

*Interagglutination of Maternal and Fetal Blood in Relation to Eclampsia. V. Cathala and H. Le Rasle.—p. 577.

Is Interagglutination of Maternal and Fetal Blood a Factor in Pregnancy Toxemias?—Cathala and LeRasle found in ninety-two cases of normal pregnancy that the blood of the mother and of the new-born infant were of different groups in twenty-five; thus there was blood incompatibility in 14 per cent. Of the twenty-nine cases with pregnancy complications, the blood groups were different in the mother and fetus in only 20 per cent. Blood incompatibility was manifest in three of twenty-one pregnant women with albuminuria; in one of four with eclampsia and in one of three with utero-placental hemorrhage. Evidently incompatibility of the maternal and fetal blood is not responsible for eclampsia or other complications in pregnancy as, in the majority of the toxemias of pregnancy investigated, there was no iso-agglutination.

20: 609-648 (Nov. 10) 1925

*Pregnancy and Postoperative Adhesions. J. Moglia.—p. 609.

Importance of Adhesions in Pregnancy.—Moglia reports six cases in which adhesions consecutive to appendectomy had provoked premature labor. He reiterates that adhesions from a pathologic process or an operation may impede the development of a pregnant uterus, and entail abortion, premature labor or shoulder presentation. The adhesions may cause severe pain during pregnancy, requiring sometimes surgical intervention. Careful restoration of the peritoneal cavity to its previous condition, at every laparotomy, may be a prophylactic measure against these complications of pregnancy.

Policlinico, Rome

32: 473-536 (Oct. 15) 1925. Surgical Section

Origin of Cooper's Fascia in Scrotal Region. P. Barco.—p. 473.
Fracture of Lower End of the Humerus. G. Cairo.—p. 479.
Hydatid Cyst in Lumbar Region. A. Campatelli.—p. 493.
Blood Cysts in the Neck. V. Jura.—p. 501.
*Elephantiasis of the Legs. M. Melletti.—p. 520.

Operative Treatment of Varicose Elephantiasis of the Legs.—Melletti's illustrations show the almost perfect result of a Kondoleon operation done four years ago on a women, aged 48, whose work requires almost continuous standing. He kept her in bed for nearly three months, with massage, before the operation, to get the skin and leg ulcers into better condition. He prefers Kondoleon's technic as no foreign body is left in the tissues, and as Arnold's explanation of its mechanism seems so plausible.

Riforma Medica, Naples

41: 1085-1108 (Nov. 16) 1925

Case of Mega-Esophagus. V. Scimone.—p. 1085.
Ileocolostomy. O. Cantelmo.—p. 1088.
The Aeroplane in Transporting the Sick and Wounded. Baduel.—p. 1103.
*Tuberculous Peritonitis. T. Silvestri.—p. 1105.

Tuberculous Peritonitis.—Silvestri reiterates the advantages of insufflation of air in tuberculosis of all serous cavities. He has been applying this method in his practice since 1906.

Tumori, Rome

11: 385-511, 1925

Kidney Tumor of Partial Hypernephroma Type. D'Alessandro.—p. 385.
Histogenesis of Spleen Neoplasms. G. Lino.—p. 407.
Serologic Findings at Different Ages. G. Pacetto.—p. 421.
*Importance of Certain Organs in Oncology. G. Pacetto.—p. 463.

Importance of Certain Organs in Oncology.—Pacetto remarks that, of all the organs, the blood and lymph producing apparatus seem to exert the greatest inhibiting influence on tumor production. The measures which check the growth of tumors (roentgen rays, autolysates, etc.) act predominantly by stimulating the action of the inhibiting organs. The tumor cell-destroying property seems to be strongest at birth and decreases with age. It is the loss of this property, and not the acquirement of any tumor-promoting property, which explains the incidence of tumors with advancing years. In one newly born infant, the extract of the thymus displayed a lytic action of 70 per cent on tumor cells and of 15 per cent on normal cells. In some other children, these figures were 80 and 10 with the spleen; 75 and 5 with the thymus; 50 and 0 with the skin. The findings with mixtures of young and old serums are tabulated.

Archivos Españoles de Pediatría, Madrid

9: 577-640 (Oct.) 1925

The Training of Abnormal Children. C. Juarros.—p. 577.
*Cholesterol in Cerebrospinal Fluid. García del Diestro.—p. 601.

Cholesterol in the Cerebrospinal Fluid of Children with Recurring Acidosis.—García del Diestro relates that in two cases of attacks of acetonemia, with symptoms of encephalitis, there was no odor of acetone on the breath, but numerous cholesterol crystals were found in the cerebrospinal fluid. This acetonemic acidosis encephalitis differed from the epidemic form in the lack of the ocular symptoms, the intensity and persistence of the vomiting, and the absence of the tendency to somnolency and headache. Another important differential symptom is the elimination of acetone bodies. He suggests that in this recurring hemacidosis, the hypercholesteremia represents a defensive reaction against the acetonemic intoxication.

Archivos Latino-Amer. de Pediatría, Buenos Aires

19: 973-1044 (Aug.) 1925

*Oneiric Delirium. J. M. Obarrio.—p. 973. Begun, p. 906.
*Suppuration in Urinary Tract in Infants. E. Martínez Zuviría.—p. 989.
Clutton's Hydrarthrosis. S. Satanowsky.—p. 1002.
*Case of Thrombophlebitis of Lateral Sinus. M. Rodella.—p. 1008.
General Paresis in Boy Aged 15. A. Sicco and N. Leone Bloise.—p. 1011.
*Chronic Polyarticular Rheumatism in Child. E. Portu Pereyra.—p. 1021.
*Epistaxis from Sodium Salicylate. M. Rodella.—p. 1026.

Nocturnal Nervous Disturbances and Oneiric Delirium in Children.—A similar article by Obarrio was summarized in these columns, Dec. 26, 1925, page 2058.

Suppuration in Urinary Apparatus in Infants.—Martínez Zuviría reiterates that the practitioner must beware of assuming intestinal infection as a matter of course when an infant presents fever. Search for blood, albumin, colon bacilli or pus in the urine may reveal suppuration in the urinary passages. Treatment is practically the same whether it is in the bladder or the kidney; the main thing is to think of its possibility, especially when it is secondary to an infectious disease. He describes a number of cases, saying that the portal of entry was not discovered in any instance.

Thrombophlebitis of the Lateral Sinus.—The girl, aged 13, with chronic otitis, died suddenly after a day or two of a slight meningeal reaction, explained by thrombophlebitis of the lateral sinus.

Chronic Rheumatism in Child.—The symmetrical chronic deforming polyarticular rheumatism developed at first in the boy, aged 8, as an acute febrile and very painful articular rheumatism. This acute phase subsided after a two months' course, without apparent injury of the heart. There is nothing to indicate syphilis in the family.

Epistaxis from Sodium Salicylate.—Rodella reports a series of five children who presented profuse and repeated epistaxis after vigorous treatment with sodium salicylate for acute articular rheumatism; all but one of the cases were in the same month.

Brazil-Medico, Rio de Janeiro

2: 143-160 (Sept. 12) 1925

*Injection Treatment of Hemorrhoids. L. Sodré.—p. 143.
*Unusual Complications of Influenza. A. Marques.—p. 151.
*Symmetrical Keratitis in Infants. E. Campos.—p. 153.

Injection Treatment of Hemorrhoids.—Sodré mentions three reasons why local injections, to obliterate the vessel, should be applied only to external hemorrhoids. From six to twelve injections are usually required, and there should be no pain from them. Of the 547 injections he has made for this purpose, there was an inflammatory reaction, with pains, only in six. He follows the Bensaude technic (quinin and urea) and found only four of the 223 patients in whom this treatment was contraindicated. He urges educating the public to the advantages of correcting the condition early.

Unusual Complications of Influenza.—Marques lists intense pains in joints, asthma, pyelitis or anuria observed in several cases as a complication of influenza. In one young woman the influenza began with asthma and terminated with pyelitis. The anuria in one case, with retention of chlorids, proved fatal.

Keratitis from Dehydration.—Campos emphasizes the necessity for watching over the eyes in gastro-intestinal disease or coma, especially in infants. If the lids do not close tight, or if there is dehydration, the cornea gets too dry, and there is liable to be suppuration. The lesion is usually bilateral, symmetrical, and torpid, and it subsides under local treatment as the general health improves. This form of keratitis would never develop if care were taken to close the eyelids with a strip of adhesive during prolonged coma, etc.

Revista de la Soc. Arg. de Nipiología, Buenos Aires

1: 93-140 (Sept. 24) 1925

Proposed Ordinance on Milk. M. Etchegaray and E. Foster.—p. 93.
*Congenital Diaphragmatic Hernia. U. Fernández.—p. 102.
Birth Injuries of the Shoulder. J. M. Jorge.—p. 123.
Consanguinity. J. Busco.—p. 131.
Acquired Alcoholism in Infants. A. Segers.—p. 137.

Diaphragmatic Hernia in the New-Born.—Ubaldo Fernández reports the case of an infant that became cyanotic as it took the breast, and the thorax bulged while the abdomen was sunken, the apex beat displaced, and there was no gastric fremitus. His roentgenograms revealed left diaphragmatic hernia. As the Wassermann test was weakly positive, treatment for syphilis was begun, with excellent results; the symptoms were much less pronounced now at the age of 3 months. He gives the roentgenograms of a second case; this infant lived only thirty minutes.

Semana Médica, Buenos Aires

2: 945-1012 (Oct. 15) 1925

*Epidemic Encephalitis in Children. M. Acuña.—p. 945.
*Endemic Chronic Arsenicism. J. J. Bosco.—p. 951.
*Paroxysmal Cyanosis. R. Cibils Aguirre.—p. 957.
Use of Oxytocics by Midwives. J. A. Gabastou.—p. 965.
*False Hirschsprung's Disease. J. J. Viton and J. A. Cruciani.—p. 969.
Hernia of Vitreous Body. J. Lijó Pavia.—p. 972.
The Primary Focus in Child Lung. C. Carreño.—p. 974.
Infected Gastric and Duodenal Ulcer. R. Solé.—p. 979.
Vaccine for Pneumococcus Infections. Torviso and Cramer.—p. 983.
Technic for Ligation of Tibial Artery. J. A. Caeiro.—p. 986.
Rupture of Ovarian Cyst at End of Pregnancy. Pérez and Guiroy.—p. 989.

Epidemic Encephalitis in Children.—Acuña comments on the rarity of this disease in young children, and describes two cases in girls aged 8 and 14, with apparently complete recovery after a course of three months and of forty days. The clinical picture was very grave in the younger child; from the first, muscular incoordination was extreme, with inability to stand, and absence of knee-jerk. In both, the high glucose content of the spinal fluid confirmed the diagnosis. Epidemic encephalitis in quite young children is probably mistaken for other disease—he knows of only five established cases on record, although he has encountered several suggestive cases himself.

Endemic Chronic Arsenic Poisoning.—Bosco illustrates some extreme cases of keratoderma from arsenic in the water. He urges the necessity for suspecting endemic arsenicism with symmetrical lesions of the kind; the diagnosis is established beyond question when there is pigmentation besides. The melanoderma persists even after the keratoderma has retrogressed. Córdoba province has several endemic foci, but Bell-Ville, the principal one, has now secured a safe water supply.

Paroxysmal Cyanosis.—The infant in Cibils Aguirre's case had a good color except during the attacks of Variot's paroxysmal cyanosis. The teleroentgenograms are compared with the normal standards, showing global enlargement of the heart and special dilatation of the right ventricle. This sustains the assumption of an abnormal narrow infundibulum, acting under special strain like a sphincter, checking and backing up the blood.

False Hirschsprung's Disease.—The positive response to the tuberculin skin test called for tuberculin treatment in the case of what seemed to be Hirschsprung's disease in a boy aged 5. To Viton and Cruciani's surprise, the tuberculin treatment cured the megacolon, the impediment to the passage of feces disappearing and the intestines returning to approximately normal size. Diarrhea during the first year of life may have been the first manifestation of the undoubtedly tuberculous process. The obstruction was at the right angle of the colon. The tuberculin was given by Viton's method of extremely minute doses.

Archiv für klinische Chirurgie, Berlin

137: 199-462 (Nov. 25) 1925

Hemorrhage in Disease of the Bile Passages. K. Büdinger.—p. 199.
*Operations on the Sympathetic Nerve. E. Liek.—p. 220.
Intestinal Occlusion. J. Perlmann.—p. 245.
Gunshot Wounds of Peripheral Nerves. S. A. Jacobson.—p. 265.
*Artificial Sphincter in Treatment of Hernia, etc. H. Hans.—p. 277.
*Nerves of Arteries. L. Hirsch.—p. 281.
Periosteum and Pseudarthroses. H. Jessen.—p. 289.
Amputation of the Lung. J. Feiermann.—p. 300.
Gallbladder Diverticulum and the Stomach. W. Sebening and W. Schöndube.—p. 308.
*The Bone After Nail Extension. W. Block.—p. 315.
Treatment of Infected Wounds. S. Nakamura.—p. 330.
Gas Metabolism After Surgery on the Thyroid. E. Gmelin and H. L. Kowitz.—p. 340.
Intussusception in Children. W. Birkenfeld.—p. 356.
Surgical Results in Exophthalmic Goiter. A. Ladwig.—p. 367.
*Fatal Hemorrhage After Extraction of Tooth. F. Kroh.—p. 389.
Fracture of Neck of Femur. L. Kreuz.—p. 401.
Orchidopexy in Cryptorchism. N. N. Saokolow.—p. 438.
Deep Duodenal Ulcer. H. Lossen and E. Schneider.—p. 446.
Arthrotomy of the Knee. N. Grzywa.—p. 453.
Intramesenteric Fibromyoma. O. Wassertrüdinger.—p. 456.
Treatment of Genu Valgum. K. Reschke.—p. 459.

Operations on the Sympathetic Nerve.—Liek's iconoclastic paper explaining the results of surgery of the sympathetic as witchcraft (*Zauber*) will be discussed elsewhere.

Artificial Sphincter in Treatment of Hernia.—Hans covers the defect in the abdominal wall by forming two pedunculated bridges of fascia, crossing them in the center and suturing the margins together. The arch thus formed by fascia pulling in opposite directions contracts the edges of the gap, whenever it is subject to strain. He uses a similar principle in treatment of large diastasis of the rectus muscles, and in making an artificial anus.

Nerves of Arteries.—Dissection of the nerves of the arteries convinced Hirsch that the decortication of peripheral sympathectomy cannot interrupt any long paths. Yet it denervates not only the segment where it is made, but also partially the distal portions of the artery and its branches.

The Bone After Nail Extension.—Block found very little change in the bones after wire extension—with good technic, avoiding pressure and infection of skin and soft parts. Boring into the bone produces heat, which inhibits to a certain extent the formation of callus. The latter forms better when a saw or chisel is used.

Fatal Hemorrhage After Extraction of Tooth.—Kroh's patient bled to death within a few minutes after extraction of a loose tooth. His mother remembered afterward that he had been bleeding in the preceding days. The cause was a cavernous angioma of the mandible. Kroh emphasizes the necessity to proceed cautiously in extracting loose teeth with preceding hemorrhages. Roentgen-ray examination and an exploratory puncture of the swelling might have indicated that a major intervention would have to follow.

Deutsche medizinische Wochenschrift, Berlin

51: 1975-2016 (Nov. 27) 1925

Predisposition and Epidemics. B. Lange.—p. 1975.
*Gastric Secretion. W. Arnoldi and M. Schechter.—p. 1980.
Visceromotor Reflex from Pleural Adhesion. L. Hofbauer.—p. 1981.
*Simultaneous Injection of Tuberculin and Vaccine. Fernbach.—p. 1983.
Prognosis of "Tennis Elbow." K. Ochsenius.—p. 1988.
Irradiation and Endocrines in Cancers. M. Fränkel.—p. 1989.
Reply. L. Halberstädter.—p. 1989.
*Fragility of Erythrocytes and Digestion. Acél and Gál.—p. 1990.
Rickets: Theory and Practice. P. György.—p. 1991.
*Light, and Cause of Rickets. R. Degkwitz.—p. 1993.
Endocrines and Rickets. H. Vollmer.—p. 1994.
*Kyphosis in Rickets. S. Engel.—p. 1995.
Present Status of Rickets Question. H. Beumer.—p. 1997.
Milk in Infant Feeding. S. Engel.—p. 1998.
Venereal Diseases in Children. H. Davidsohn.—p. 2010. C'td.

Gastric Secretion.—Arnoldi and Schechter observed an increased acidity of the gastric secretion in subjects who had taken 20 Gm. of glucose in 150 cc. of water twelve or more hours before the test meal. Preparations of pancreas lowered the acidity.

Simultaneous Injection of Tuberculin and Vaccine.—Fernbach repeated Moro and Keller's experiments on tuberculin allergy induced by intracutaneous injections of a mixture of tuberculin with smallpox vaccine. He confirmed the cutaneous allergy, but he obtained the same results when using merely a concentrated glycerol bouillon for the inoculation or for the skin test. Tuberculin made no difference, and the skin reaction did not flare up after a subsequent intramuscular injection of tuberculin. He confirms, however, that the smallpox vaccine is necessary, even if it does not produce a pustule: A mixture of tuberculin with a streptococcus vaccine did not produce any allergy to the unknown constituent of the bouillon.

Fragility of Erythrocytes and Digestion.—Acél and Gál made parallel examinations of the carbon dioxid tension of the alveolar air and of the osmotic resistance of erythrocytes during digestion in patients whose gastric secretion had been examined the day before. The findings confirmed a practically complete correspondence between the conditions of secretion in the stomach and the carbon dioxid tension of the alveolar air (increase of the latter in normal subjects and in hyperacidity; decrease in anacidity). The osmotic resistance was perfectly parallel: higher in thirty-five minutes and normal seventy-five minutes or two hours after a test meal. This confirms Acél and Spitzer's hypothesis of a change of alkali reserve of the blood as the cause of the changes of fragility of the erythrocytes during digestion.

Light, and Cause of Rickets.—Degkwitz analyzed chemically the organs from apparently normal young dogs that had been kept in darkness. The bones contained less calcium, phosphorus and sodium, while the potassium was absolutely or relatively increased. There were also distinct anomalies in the fat, protein and carbohydrate content of the bones and other tissues.

Kyphosis in Rickets.—Engel deals with the paralytic kyphosis of children with rickets. He advises to place the child prone on the table, lying on its abdomen, and to tickle it on the sides. The child responds by extending its spine and holding its head high. When the seated child tries to grasp objects held high over its head, this also corrects the kyphosis during these motions.

Klinische Wochenschrift, Berlin

4: 2281-2328 (Nov. 26) 1925

Surgery of Heart and Vessels. F. Brüning.—p. 2281.
*Protein Activation of Insulin. F. Bertram.—p. 2285.
*The Brain in Spirochetoses. G. Steiner and H. Schauder.—p. 2288.
*Hereditary Tendency to Paralysis Agitans. H. Kückens.—p. 2289.
Action of Cathode Rays. A. Passow and W. E. Pauli.—p. 2292.
*Atoxyl-Resistant Lipase in Serum. H. Simon.—p. 2295.
*Epinephrin Reaction in Hypertension. S. Hetényi and S. Sümegi.—p. 2298.
*Modified Abderhalden Reaction. E. Herzfeld et al.—p. 2302.
*Action of Theophylline on Tadpoles. A. Fröhlich and E. Zak.—p. 2303.
*Theophylline and Tissues. A. Fröhlich and E. Zak.—p. 2305.
Pancreas Diseases in Infants. E. Burghard.—p. 2305.
Treatment of Collapse. J. Mantz.—p. 2306.
*Family Placement of Children in the Country. Vonessen.—p. 2309.
Perlingual Application of Insulin. J. Korbsch.—p. 2327.
Visualization of Arteries. J. von Csapody.—p. 2327.

Protein Activation of Insulin.—Bertram succeeded in enhancing the action of subcutaneous injections of insulin by mixing it with various proteins. The patient's own serum had the strongest influence; normal serum a weaker one; casein and a vegetable protein only about doubled the potency. The same substances inhibited the action of epinephrine in about the same ratio and sequence. The influence of the patient's own serum was so marked that he advises its use in every case of diabetic coma. He observed that intravenous injections act only according to the insulin content. Consequently, the intensified action of insulin is due to some process occurring in the subcutaneous tissue.

Pathology and Therapy of Spirochetoses.—Steiner and Schauder demonstrated the presence of recurrens spirochetes in the central nervous system of rats which had been injected months before. The animals were immune to reinfection.

Hereditary and Familial Tendency to Paralysis Agitans and Diabetes.—Kückens publishes a family tree showing paralysis agitans in five generations. Besides this, he observed diabetes in the family. It was especially grave in two univitelline twin boys, 15 years of age.

Atoxyl-Resistant Lipase in Serum in Pancreas Disease and in Pernicious Anemia.—Simon reports on further con-

firmations of the diagnostic value of the presence of an atoxyl-resistant lipase in the serum in disease of the pancreas. He found it also in six of fourteen pernicious anemia patients. The diastase content of the serum was also higher in some of them. The lipase contained in normal erythrocytes resists atoxyl and quinin, while the serum lipase is destroyed by these chemicals.

Epinephrine Reaction in Hypertension.—Hetényi and Sümegi were not able to find a pure vagotonic reaction of the blood pressure to epinephrine when using Csépai's intravenous method.

Modified Abderhalden Reaction.—Herzfeld, Kretschmer and Wittenberg conclude that the Lüttge and Mertz modification of the Abderhalden reaction has no diagnostic value in cancer or tuberculosis. Theoretically interesting results were obtained in endocrine disturbances. They used the commercial extracts recommended by the authors of the modification.

Action of Theophylline on Tadpoles.—Fröhlich and Zak found that theophylline in certain concentrations (1:100,000 or 1:200,000) enhanced the growth of tadpoles. A still higher dilution yielded the highest percentage of living frogs after metamorphosis.

Theophylline and the Tissues.—Fröhlich and Zak's experiments indicate that theophylline accelerates the resorption of low molecular compounds (sodium chloride, iodide and ferrocyanide). It seems to retard the absorption of trypan blue and indigocarmine from the subcutaneous tissue. If these substances are injected intraperitoneally, the conditions for resorption are so good that the mobilization of fluids—caused by the theophylline—enhances the resorption of all compounds.

Family Placement of Children in the Country.—Vonessen emphasizes that only a good selection of both the children and of the families which are to receive them avoids grave failures. The cooperation of a physician is essential.

Medizinische Klinik, Berlin

21: 1789-1828 (Nov. 27) 1925

Light and Bone Formation. W. Stepp.—p. 1789.
Tuberculosis of the Eye. Stock.—p. 1790.
Function Tests. E. Abderhalden.—p. 1792.
Female Constitutional Types. W. Hannes.—p. 1793.
*Treatment of Exudation and Infection. R. Latzel.—p. 1797.
*Traumatic Occlusion of Arteries. E. Melchior.—p. 1799.
Cancer of the Gallbladder. A. Luger.—p. 1801.
Biliary Passages and the Roentgen Rays. M. Cohn.—p. 1802.
Paralysis of the Inferior Laryngeal Nerve. W. Jülich.—p. 1805.
*Bock's Hormone Proof in Blood. G. R. Heyer.—p. 1806.
Reply. G. Peritz.—p. 1807.
*Inunction Treatment of Syphilis. B. Albrecht and E. Evers.—p. 1807.
Occupational Aggravation of Heart Lesions. Von Schnizer.—p. 1810.
Physical Therapy. G. Hauffe.—p. 1811.
Convalescents' Serum. B. de Rudder.—p. 1813.
Insulin Treatment. W. David. Supplement, pp. 107-126.

Treatment of Exudation and Infection.—Latzel had success in treatment of pulmonary edema in pneumonia with intravenous injection of 20 cc. of a 20-50 per cent glucose solution. He observed early recovery from pneumonia and typhoid when injecting a few cubic centimeters of milk and twelve hours later the sugar by the vein.

Traumatic Occlusion of Arteries.—Melchior points out that wounds of the extremities may cause obliteration of an artery. The subjective symptoms resemble intermittent claudication but they are limited to one side. The skin below usually feels cooler. These patients are frequently mistaken for "rheumatism-claiming malingerers," and the causal connection with the injury is denied.

Bock's Hormone Proof in Blood.—Heyer obtained at first good results with the polarimetric differentiation of hormones in the blood, as devised by Bock. Later on, after he made the determination exclusively without knowing the diagnosis, the failure was complete. He attributes the correct results to autosuggestion. Peritz admits this possibility, but prefers to wait for the decision of authorities on physics because of a few surprising correct results.

Inunction Treatment of Syphilis.—Albrecht and Evers found no therapeutic action from inunction with bismuth in syphilis of rabbits.

Wiener klinische Wochenschrift, Vienna

38: 1301-1324 (Dec. 3) 1925

*Sino-Auricular Conduction. C. J. Rothberger and D. Scherf.—p. 1301.
*Agranulocytosis. B. Pfab.—p. 1302.
Amputation of Leg in Gangrene. I. Eisenklam.—p. 1303.
*Regional Muscle Depression and the Stomach. T. Bársony.—p. 1306.
Liver Infarction After Rupture. W. Steiger.—p. 1308.
Amebiasis of Urinary Tract. M. Petzetakis.—p. 1310.
*Treatment of Asthma. L. Hofbauer.—p. 1311.
Therapeutic Tendencies in Surgery. W. Denk. Supplement, pp. 1-12.

Sino-Auricular Conduction. — Rothberger and Scherf's experiments showed the existence of two distinct paths of conduction between the sinus node and the auricle. Elimination of one of them caused changes of the auricular electrocardiogram. Ligation of both isolated the sinus.

Agranulocytosis.—Pfab reports a case of agranulocytic angina in a man 31 years of age. Besides the typical symptoms, thrombopenia and absence of megakaryocytes were observed. Blood transfusion had no effect on the rapid decrease of the white blood cells. The patient's erythrocytes belonged to group II.

Regional Muscle Depression and the Stomach.—Bársony attributes the motor insufficiency of the stomach (without stenosis) to a depression of the muscle tonus in the surroundings of an inflammatory focus (ulcer).

Treatment of Asthma.—Hofbauer recommends, among other measures, theobromine preparations.

Zeitschrift für klinische Medizin, Berlin

102: 129-342 (Nov. 16) 1925

Idiosyncrasy. H. Koenigsfeld.—p. 129.
*Gastric Tonus and Temperature. W. Weitz and W. Vollers.—p. 141.
*Mineral Metabolism. H. Bernhardt and C. R. H. Rabl.—p. 147.
Calcium Metabolism and White Phosphorus. H. Bernhardt.—p. 174.
*Scarlet Fever Nephritis. F. Koch.—p. 182.
Familial Metabolic Disturbance in Diabetes. H. Seckel.—p. 195.
*Insulin and Liver Disease. O. Klein.—p. 229.
*Insulin and Gas Metabolism in Exophthalmic Goiter. H. Meyer.—p. 250.
Therapeutic Malaria. W. Skalweit.—p. 258.
Ovary and Purpura. G. Nagy.—p. 284.
*Thrombosis of Coronary Arteries. D. Pletnew.—p. 295.
Tuberculosis as Cause of Dermatomyositis. W. Grunke.—p. 311.
Gas Metabolism in Skin Disease. E. Pulay.—p. 320.

Gastric Tonus and Temperature.—Weitz and Vollers found that the tonus of the stomach is increased by hot contents and decreased by cold ones. It is the opposite of the action of thermic stimuli on the skin.

Mineral Metabolism and White Phosphorus.—Bernhardt and Rabl added ammonium chloride to the diet of young rats. It caused grave disturbances of ossification in spite of a diet containing ample vitamins and salts. White phosphorus causes a sclerosis of the bones if the food contains enough phosphates and calcium. It also causes rickets if both calcium and phosphates are deficient. It prevents the formation of lime calculi in the tubules which otherwise occurs on diets containing much sodium phosphate.

Scarlet Fever Nephritis.—Koch found an increased blood pressure in the majority of convalescents from scarlet fever. It may disappear in a day or a few days, but it may lead to albuminuria and hematuria.

Insulin in Liver Disease.—Klein injected insulin in various diseases of the liver and confirms a favorable action on the subjective disturbances and on the jaundice. The injection produces here a water retention in the blood. The blood sugar, which is here usually low, sinks under insulin to a lower level than in other subjects. Administration of water and levulose accentuates this hypoglycemia further.

Insulin and Gas Metabolism in Exophthalmic Goiter.—Meyer observed a lowered oxygen consumption after injections of insulin in exophthalmic goiter patients.

Thrombosis of Coronary Arteries.—Pletnew diagnoses thrombosis of the coronary arteries in a status anginosus. A diastolic gallop rhythm may be observed. In thrombosis of the right coronary artery, the right heart dilates acutely, the liver swells and is painful, while there are no signs of pulmonary stasis in the beginning. Thrombosis of the left coronary artery leads to an acute dilatation of the heart toward the left side and downward, and there is acute pulmonary edema.

Zeitschrift für Krebsforschung, Berlin

22: 455-554 (Nov. 20) 1925

Invisible Virus and Cancer. C. Lewin.—p. 455.
*Histophysiology of Cancer Cells. I. G. Roskin.—p. 472.
Treatment of Mouse Cancer. R. Roosen.—p. 480.
Local Cancer Statistics (Lower Rhine District). H. Müller.—p. 484.
Metabolism of Cancer Cell. A. Lasnitzki.—p. 531.
Glycolysis in Rat Tumors of Bacterial Origin. A. Lasnitzki.—p. 536.
*The Blood in Experimental Cancer. F. P. Tinozzi.—p. 540.
Spontaneous Rat Sarcoma. P. Cobrs.—p. 549.

Histophysiology of Cancer Cells.—Roskin's studies indicate that in the majority of the cells of mouse cancer the cytoplasm represents the oxidation processes (instead of the nucleus). Two other groups of cells were found also.

The Blood in Experimental Cancer.—Tinozzi examined the blood from rats with tumors produced by injection of bacilli of the tumefaciens group, together with kieselguhr and edema fluid from cancer patients. Secondary anemia and leukocytosis were especially pronounced with suppuration of the tumor. Peculiar inclusions resembling Kurloff bodies occurred in monocytes in two of his rats.

Časopis lékařů českých, Prague

64: 1717-1752 (Nov. 28) 1925

*Provocation of Seizure. O. Janota.—p. 1717.
*Arterial and Venous Sugar. A. Gjurič.—p. 1723.
Ankylosis of Hip-Joint. J. Bárta.—p. 1728.
*Demelin's Forceps D 8. F. Krecar.—p. 1732. C'cn.
Hydro-Electric Bath and Blood Pressure. V. Zoubek.—p. 1741. C'cn.

Provocation of Seizure.—Janota tried to provoke epileptic seizures by deep breathing. Although he prolonged the hyperpnea experiment for forty-five minutes and even an hour, the failure was practically complete: Only two out of forty-one epileptic patients had a seizure, and these had been subject to quite frequent attacks anyway. Two epileptics and one hysterical patient reacted with hysterical seizures. He obtained no significant changes of electric excitability.

Arterial and Venous Sugar.—Gjurič confirms Lawrence's and Foster's observations on the equal height of the glucose level in the venous and capillary blood in diabetes after ingestion of glucose. By repeating the test six times within three hours, he found at times slightly higher values in the venous blood. The blood sugar is lower in the venous blood in normal subjects.

Demelin's Forceps D 8.—Krecar describes with thirty-one illustrations the mechanism of D 8 (Demelin's eighth modification of forceps). He regards it as a great advance, especially from the viewpoint of construction.

Nederlandsch Maandschrift voor Geneeskunde, Leyden

13: 249-308, 1925

*Acriflavine in Treatment of Wounds. Graftdijk.—p. 249.
*Wounds of the Pancreas. M. N. Roegholt.—p. 263.
*Medical Folklore in Java. M. N. Roegholt.—p. 276.
Separation of the Epiphysis. M. N. Roegholt.—p. 288.
Roentgen-Ray Diagnosis of Fracture of the Scaphoid Bone of the Carpus. O. Scheuder.—p. 292.
Theory and Insanity in Psychanalysis. W. J. J. de S. Nolting.—p. 295.

Acriflavine in Treatment of Wounds.—Graftdijk illustrates among others the case of a small boy who had been run over by a wagon, and half the scalp torn loose, from the median line to the eyebrow, with street dirt ground into the exposed area. After the surgical toilet, the raw surfaces were flushed and dressed with a 0.05 per cent solution of acriflavine, and the scalp was replaced. He is convinced that the acriflavine is to be credited with the warding off of grave infection in this and similar cases—this is its field; not after infection has developed.

Trauma of the Pancreas.—Roegholt protests against the advice in the textbooks to drain the pancreas after trauma.

Medical Folklore in Java.—Bier's principle of venous hyperemia is applied by the Javanese in treatment of an infected finger. The finger is inserted in the rectum of a chicken and held there for hours. The pressure of the sphincter insures the stasis hyperemia. Circumcision is done at the age of 14, and anesthesia is induced for it by making the victim stand for an hour or more in a cold stream, with the water to his waist. He is then operated on while still chattering with the cold. The white of egg is used to staunch the blood, applied externally. The wound is cleansed every day by stepping into the cold stream, and it is then powdered with a fine earth, roasted for the purpose. Massage is used a great deal, "with much attendant hocus-pocus." The rarity of bone and joint tuberculosis may be due to the universal exposure of the limbs of children to the sun.

Hygiea, Stockholm

87: 689-720 (Sept. 30) 1925

A Century of Research on the Cerebellum. C. Hesser.—p. 689.

87: 753-784 (Oct. 31) 1925

The Tonsil Question: To be Or Not To Be. I. Syk.—p. 753.

87: 785-816 (Nov. 15) 1925

*Microtest for Blood Sugar. N. Johannsen.—p. 785.
Prostatectomy. E. Tengwall.—p. 795. C'td.

Microtest for Blood Sugar.—Johannsen extols the ease, simplicity and rapidity of the Becher-Herrmann technic. The findings with it paralleled astonishingly those of the more complicated methods in his extensive experience with it. It is based on the Jaffé picric acid creatinin test. The blood (0.10 cc.) is placed in the first of a set of six tubes, containing 1.9 cc. of distilled water, and then 1.5 cc. of a 1.2 per cent solution of picric acid is added. After mixing, the fluid is decanted through a filter into a graduated test tube to the line for 2.1 cc. Then 0.3 cc. of a 4 per cent solution of sodium hydroxid is added, bringing the fluid to the 2.4 cc. mark, and it is boiled for one to one and a half minutes, filling with distilled water to maintain it at the 2.4 cc. mark. The fluid is filtered anew into another test tube of the same caliber. The color of the fluid then, if it contains 0.10 per cent of sugar, is identical with that of a 0.25 per cent solution of potassium bichromate. The reagents keep well.

Norsk Magazin for Lægevidenskaben, Oslo

86: 1173-1292 (Nov.) 1925

*Mammary Cancer. E. Dahl.—p. 1173.
Tangential Sclerectomy for Glaucoma. I. Schiøtz.—p. 1202.
Results of Different Operations for Glaucoma. Gjessing.—p. 1208.
*Hemorrhagic Nephritis After Appendectomy. H. F. Harbitz.—p. 1212.
Case of Self-Strangling. C. Wingard.—p. 1216.
*Dyspepsia in the Breast-Fed. K. U. Toverud.—p. 1217.
Mortality from Pulmonary Tuberculosis at Oslo Among Those Born There and Born Elsewhere. A. de Besche and J. O. Jørgensen.—p. 1229.
For and Against Homeopathy. K. Grøn.—p. 1253.

Mammary Cancer.—Dahl asserts that the prognosis of radical extirpation of a cancer of the breast depends on the glands. Of his eighty-three cases in this category, only 20.34; 15.79, and 14.04 per cent of those with involvement of the glands were still living at the end of three years, five years, or longer than this. Corresponding figures of survival of those without involvement of the glands were 70.83; 66.67 and 66.67 per cent.

Acute Hemorrhagic Nephritis After Appendectomy.—The patients were girls of 10 and 13, and the acute hemorrhagic nephritis developed, without fever or pains, during the confinement of convalescence from an appendectomy. Harbitz cultivated a motile bacillus (probably colon bacillus) from the urine of both girls. One had complete anuria for sixty hours.

A Common Cause of Dyspepsia in Breast-Fed Infants.—Toverud explains that the restlessness, vomiting and diarrhea, with or without loss of weight, weakness and periods of constipation may be due to actual starvation. The mothers in the cases described were not secreting enough milk, and the children were suffering from unsuspected inadequacy of nourishment.

Ugeskrift for Læger, Copenhagen

87: 1073-1098 (Dec. 3) 1925

*Carbohydrate Metabolism. IX. S. A. Holbøll and E. Fock.—p. 1073.
Pathogenesis of Jaundice. E. Meulengracht.—p. 1078. C'td.
Injection Treatment of Varicose Veins. G. Jensen.—p. 1082.

Carbohydrate Metabolism.—Holbøll and his collaborator discuss the distribution of glucose between the erythrocytes and the plasma in the normal and in diabetics, and the cause of fluctuations.